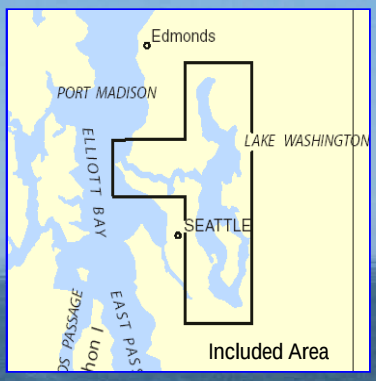
BookletChart™

Lake Washington Ship Canal and Lake Washington

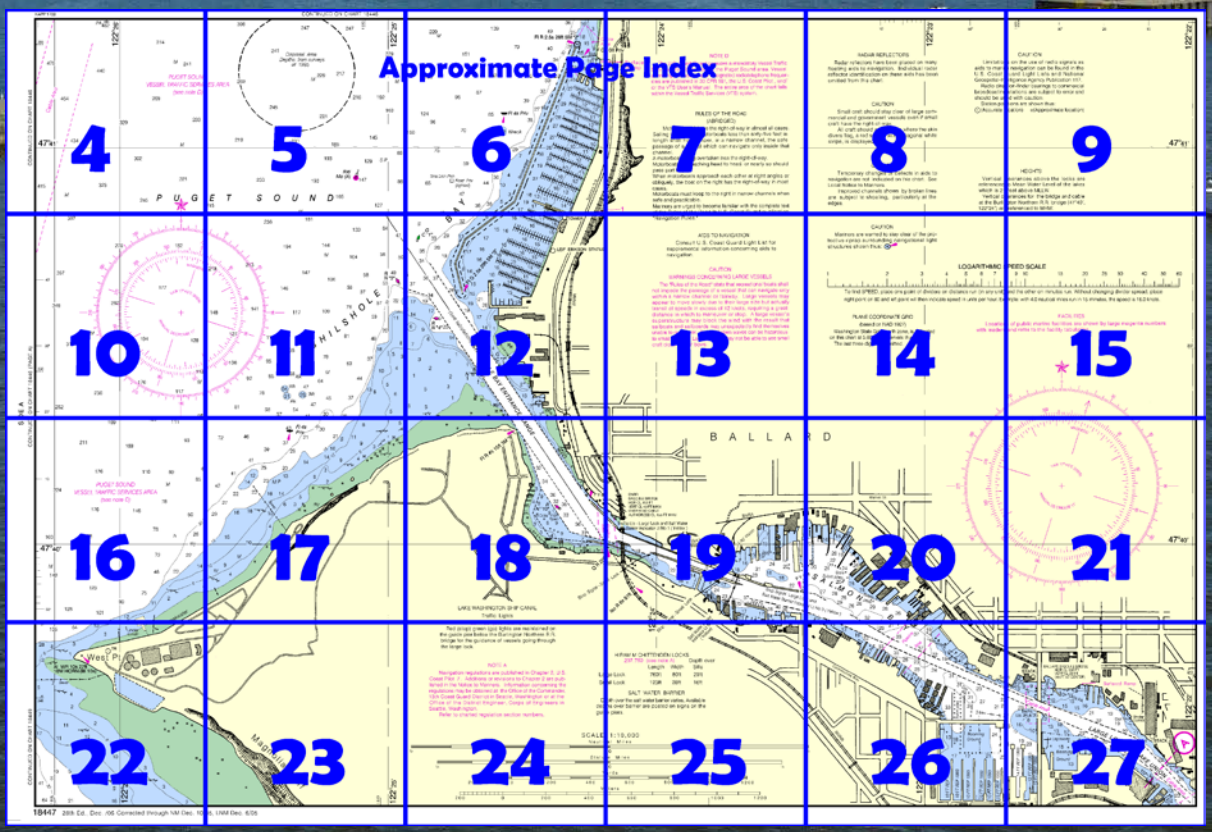
NOAA Chart 18447

A reduced-scale NOAA nautical chart for small boaters

When possible, use the full-size NOAA chart for navigation.



- Complete, reduced-scale nautical chart
- Print at home for free
- Convenient size
- Up-to-date with Notices to Mariners
- Compiled by NOAA's Office of Coast Survey, the nation's chartmaker



Published by the
National Oceanic and Atmospheric Administration
National Ocean Service
Office of Coast Survey
www.NauticalCharts.NOAA.gov
888-990-NOAA

What are Nautical Charts?

Nautical charts are a fundamental tool of marine navigation. They show water depths, obstructions, buoys, other aids to navigation, and much more. The information is shown in a way that promotes safe and efficient navigation. Chart carriage is mandatory on the commercial ships that carry America's commerce. They are also used on every Navy and Coast Guard ship, fishing and passenger vessels, and are widely carried by recreational boaters.

What is a BookletChart™?

This BookletChart is made to help recreational boaters locate themselves on the water. It has been reduced in scale for convenience, but otherwise contains all the information of the full-scale nautical chart. The bar scales have also been reduced, and are accurate when used to measure distances in this BookletChart. See the Note at the bottom of page 5 for the reduction in scale applied to this chart.

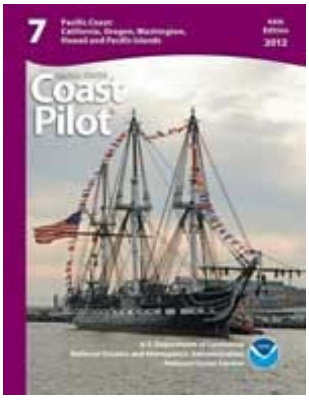
Whenever possible, use the official, full scale NOAA nautical chart for navigation. Nautical chart sales agents are listed on the Internet at http://www.NauticalCharts.NOAA.gov.

This BookletChart does NOT fulfill chart carriage requirements for regulated commercial vessels under Titles 33 and 44 of the Code of Federal Regulations.

Notice to Mariners Correction Status

This BookletChart has been updated for chart corrections published in the U.S. Coast Guard Local Notice to Mariners, the National Geospatial Intelligence Agency Weekly Notice to Mariners, and, where applicable, the Canadian Coast Guard Notice to Mariners. Additional chart corrections have been made by NOAA in advance of their publication in a Notice to Mariners. The last Notices to Mariners applied to this chart are listed in the Note at the bottom of page 7. Coast Pilot excerpts are not being corrected.

For latest Coast Pilot excerpt visit the Office of Coast Survey website at http://www.nauticalcharts.noaa.gov/nsd/searchbychart.php?chart=18447.

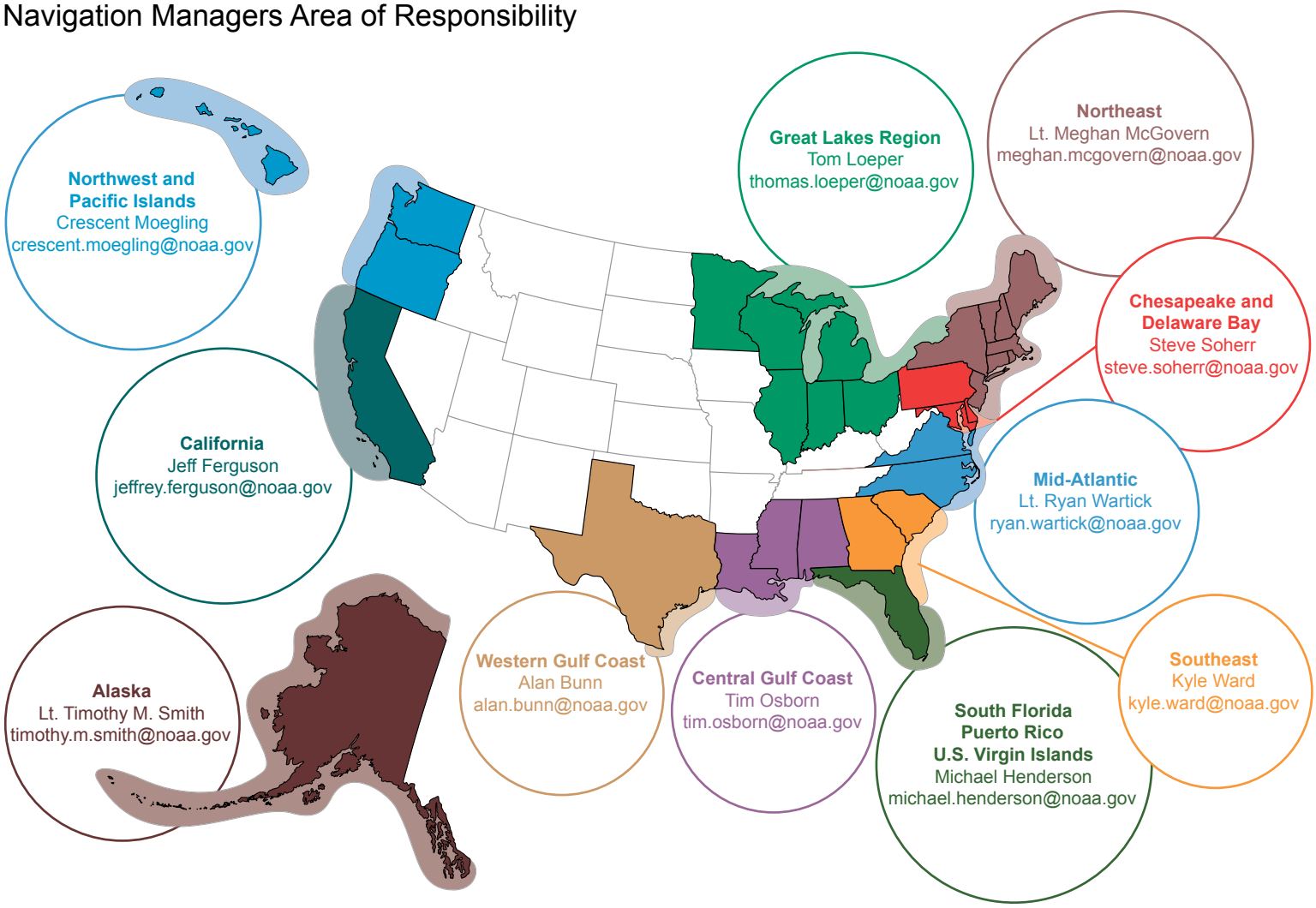


(Selected Excerpts from Coast Pilot)
Shilshole Bay is between Meadow Point and West Point. It is an open bight from which the Lake Washington Ship Canal is entered, and is the site of the largest marina in the Seattle area. **Shilshole Bay Marina**, the small-craft basin just N of the canal entrance, is administered by the Port of Seattle. A 4,400-foot breakwater, marked at each end by a light, protects the basin.
Elliott Bay indents the E shore of Puget Sound just N of Duwamish Head. The entrance is between West Point on the N and Alki Point 5 miles S. The bay proper, lying E of a line between Magnolia Bluff and Duwamish Head, has a width of about 2 miles and extends SE for nearly the same distance. The bay is deep throughout most of its area.
A **speed limit** of 4 knots is enforced within the guide piers of the Hiram M. Chittenden Locks. A **speed limit** of 7 knots is enforced elsewhere in the Lake Washington Ship Canal, except in an area marked by four private buoys in the N part of Lake Union.
The **Hiram M. Chittenden Locks,** a double lock, and a fixed dam are at the narrows of the entrance to Salmon Bay, 1.2 miles in from the sound. The large lock, a two-chamber structure, has a clear length of 760 feet, width of 80 feet, lift of 26 feet, and depth over the lower miter sill of 29 feet. The small lock has a clear length of 123 feet, width of 28 feet, lift of 26 feet, and depth over the lower sill of 16 feet. Passage time is less than 30 minutes for large vessels and 5 to 10 minutes for small vessels. The lock tenders monitor VHF-FM channel 13, and can be contacted at 206-783-7000 for additional information.
A saltwater barrier extends across the E end of the E chamber of the large lock to reduce the intrusion of saltwater into Lake Washington and to conserve water. (See **207.750**, chapter 2, for navigation regulations for Lake Washington Ship Canal, the Hiram M. Chittenden Locks, and the saltwater barrier.)
Salmon Bay extends for about 0.8 mile from the E end of the locks to the Ballard (15th Avenue) Bridge. There are numerous piers and floats with extensive small-craft facilities on the bay. Fishermen's Terminal, operated by the Port of Seattle, is immediately W of the Ballard Bridge. The terminal is the home port of a large commercial fishing fleet. Depths of 14 to 28 feet are alongside the piers.
From Salmon Bay the canal leads SE to **Lake Union**, which is about 1 mile long in a N-S direction and about 0.5 mile wide. Depths in the lake range generally from 37 to 41 feet. There is an 11-foot shoal about 200 yards offshore from the SW end of the lake; it is marked by a buoy. Four private buoys in the N part of Lake Union mark an unrestricted speed zone, which is used by boat builders around the lake as a testing area. The buoys are frequently repositioned; caution is advised when transiting the area.
Lake Washington Ship Canal is crossed by five bascule bridges and two fixed bridges. Clearances of the drawspans are 14 to 43 feet. (See **117.1 through 117.59 and 117.1051**, chapter 2, for drawbridge regulations.) The bridgetenders of the drawbridges monitor VHF-FM channel 16 and 13, and work on channel 13. The call signs are as follows: Burlington Northern Railroad, KCE-201; Ballard (15th Avenue), KJA-445; Fremont Avenue, KJA-442; University, KJA-441; Montlake, KJA-438. The fixed bridges have a least clearance of 127 feet. Cables crossing the canal have a least clearance of 155 feet.
State Route 520 pontoon bridge crossing the lake between Seattle and Evergreen Point has a fixed span at the E and W ends. The clearances are 57 feet at the E end and 44 feet at the W end. The floating drawspans at the center of the bridge provide an opening 100 feet wide. (See **117.1 through 117.59 and 117.1049**, chapter 2, for drawbridge regulations.) The Interstate Route 90 pontoon bridges between Seattle and East Seattle, on the N end of **Mercer Island**, have fixed spans at the E and W ends with clearances of 29 feet. The underwater remains of the E and W piers of a former fixed bridge are just SE of the Interstate Route 90 bridge. Mariners should use caution when outside the main navigation channel.

U.S. Coast Guard Rescue Coordination Center
24 hour Regional Contact for Emergencies

RCC Seattle	Commander 13th CG District Seattle, WA	(206) 220-7001

Navigation Managers Area of Responsibility

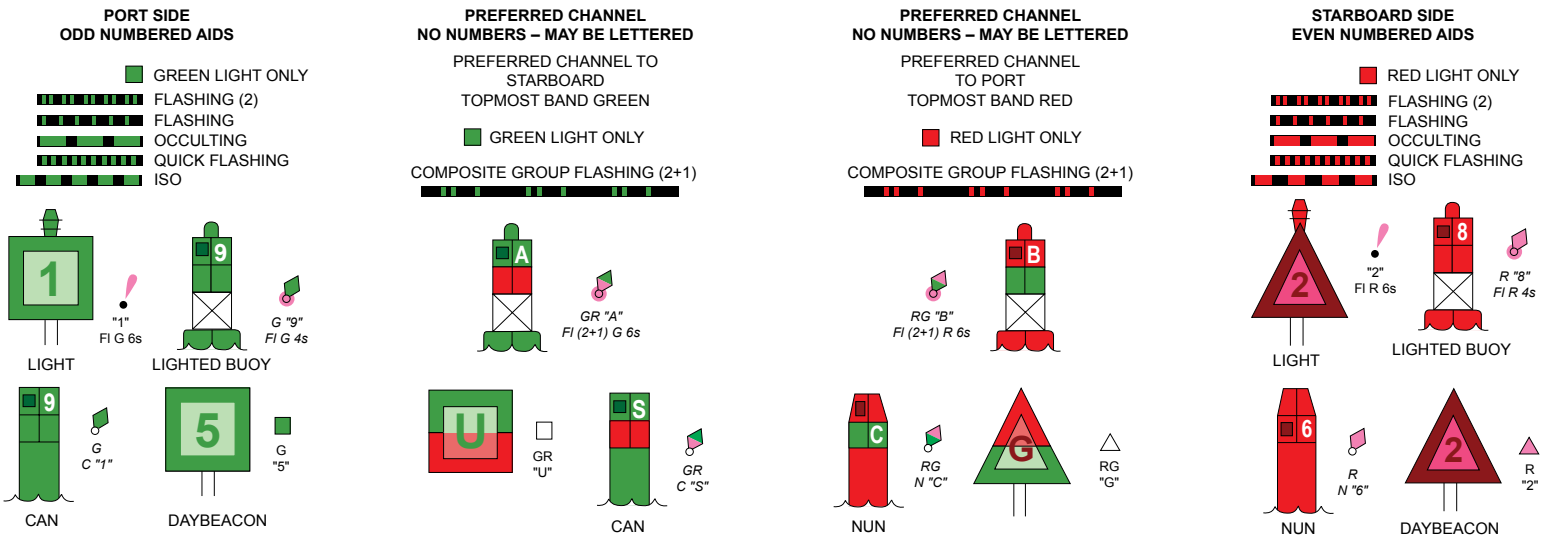


NOAA's navigation managers serve as ambassadors to the maritime community. They help identify navigational challenges facing professional and recreational mariners, and provide NOAA resources and information for safe navigation. For additional information, please visit *nauticalcharts.noaa.gov/service/navmanagers*

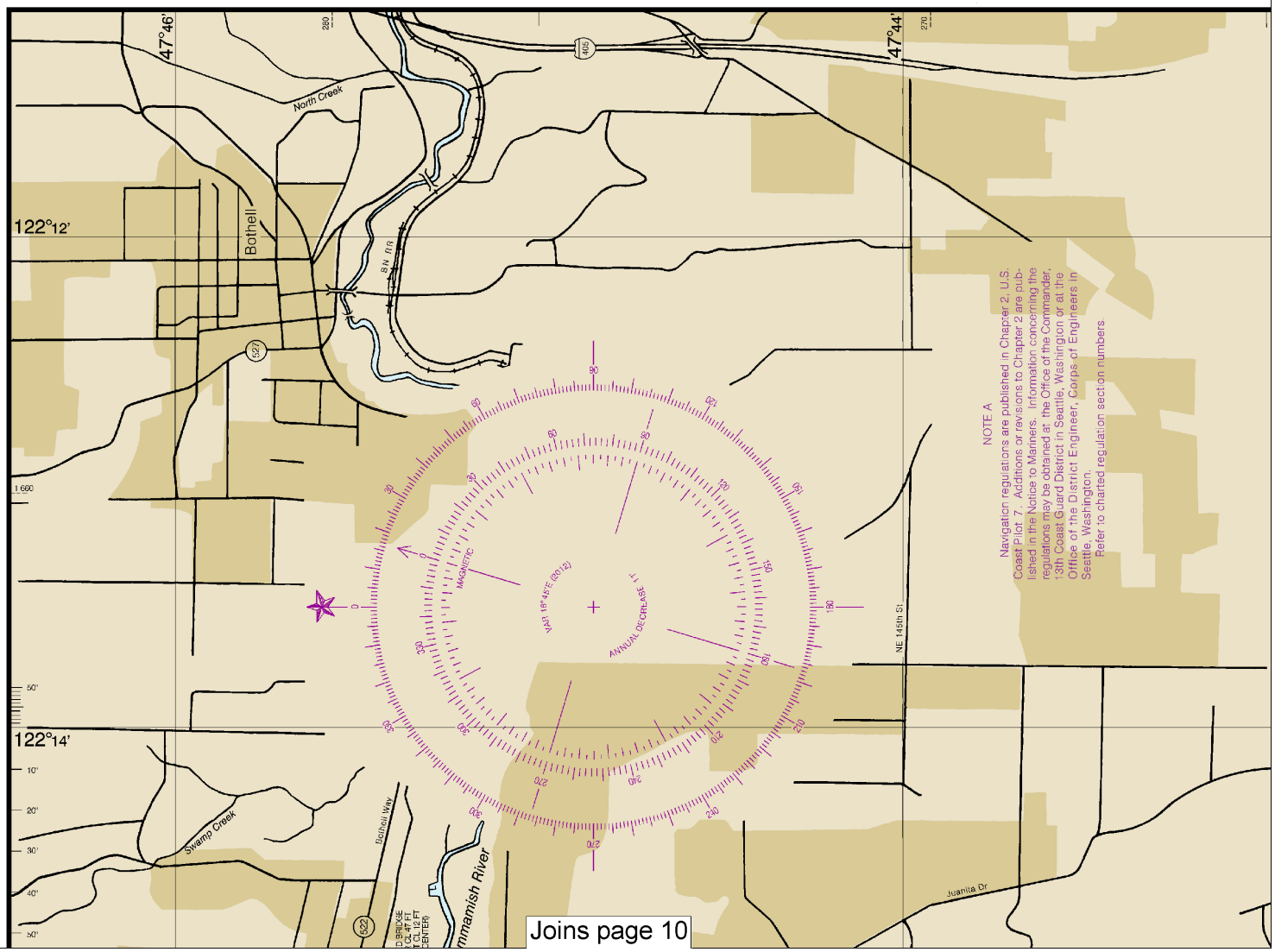
To make suggestions or ask questions online, go to *nauticalcharts.noaa.gov/inquiry*.
To report a chart discrepancy, please use *ocsdata.ncd.noaa.gov/idrs/discrepancy.aspx*.

Lateral System As Seen Entering From Seaward

on navigable waters except Western Rivers



For more information on aids to navigation, including those on Western Rivers, please consult the latest USCG Light List for your area. These volumes are available online at *http://www.navcen.uscg.gov*



SIDE B

4

Note: Chart grid lines are aligned with true north.

Printed at reduced scale. ~~SCALE 1:10,000~~

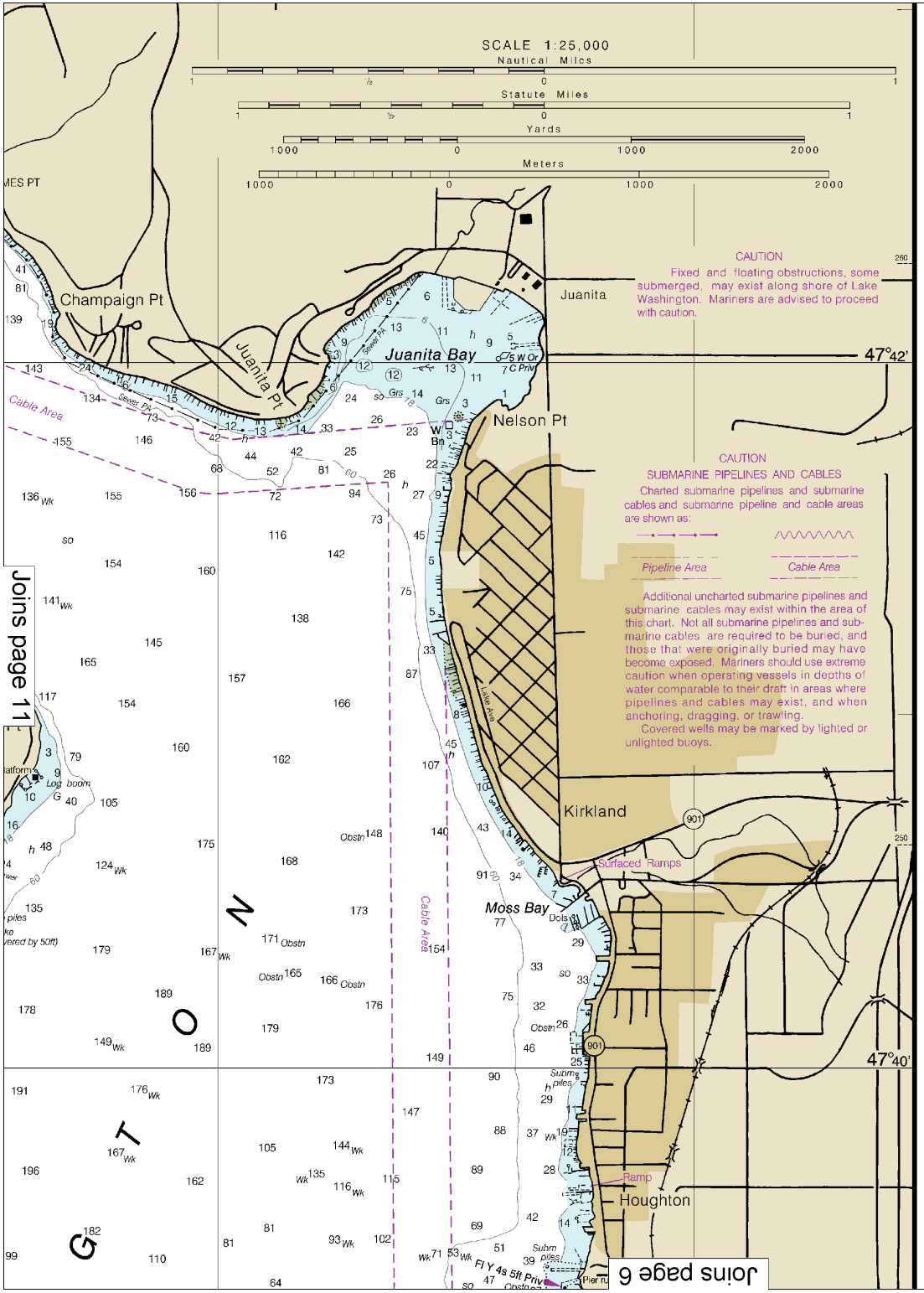
Nautical Miles

0

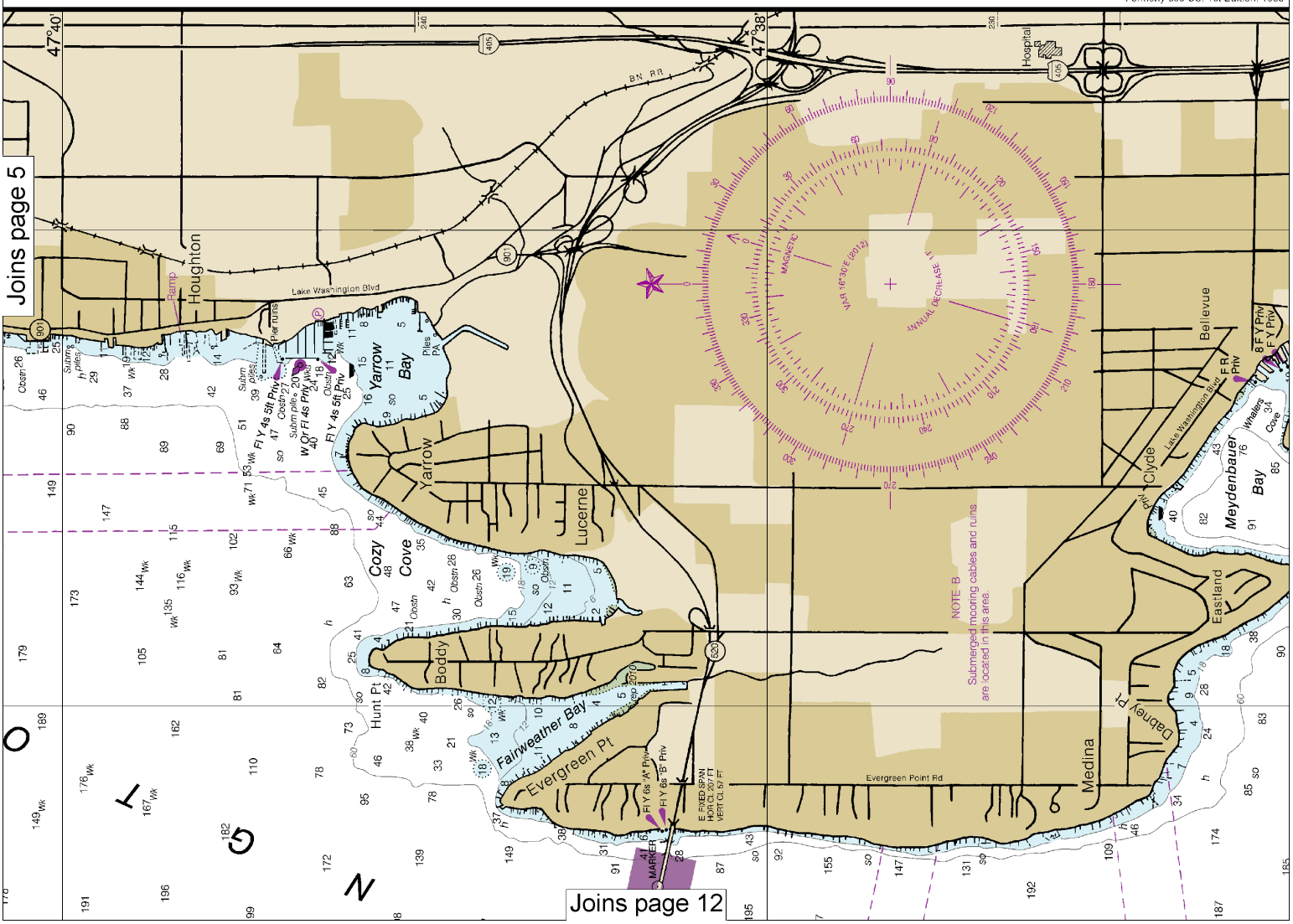
Yards

200 0 200 400 600 800 1000 1200

See Note on page 5.



This BookletChart was reduced to 75% of the original chart scale.
The new scale is 1:13333. Barscales have also been reduced and
are accurate when used to measure distances in this BookletChart.



6

Note: Chart grid lines are aligned with true north.

Printed at reduced scale. ~~SCALE 1:10,000~~

Nautical Miles

0

Yards

200 0 200 400 600 800 1000 1200

See Note on page 5.

NOAA WEATHER RADIO BROADCASTS

CITY	STATION	FREQ. (MHz)	BROADCAST TIMES
Seattle, Wash.	KHB-60	162.550	24 hours daily
Olympia, Wash.	WXM-62	162.475	24 hours daily

BROADCASTS OF MARIN

CITY	STA
Seattle, Wash.	NM

* Preceded by announcem
Distress calls for small cra
channel 16 (156.80 MHz)

MARINE WEATHER FORECASTS

NATIONAL WEATHER SERVICE	TELEPHONE NUMBER	OFFICE HOURS
Seattle, WA	(206) 526-6087	8am to 3pm M-F*

*Recorded forecasts only at other times.

TIDAL INFORMATION

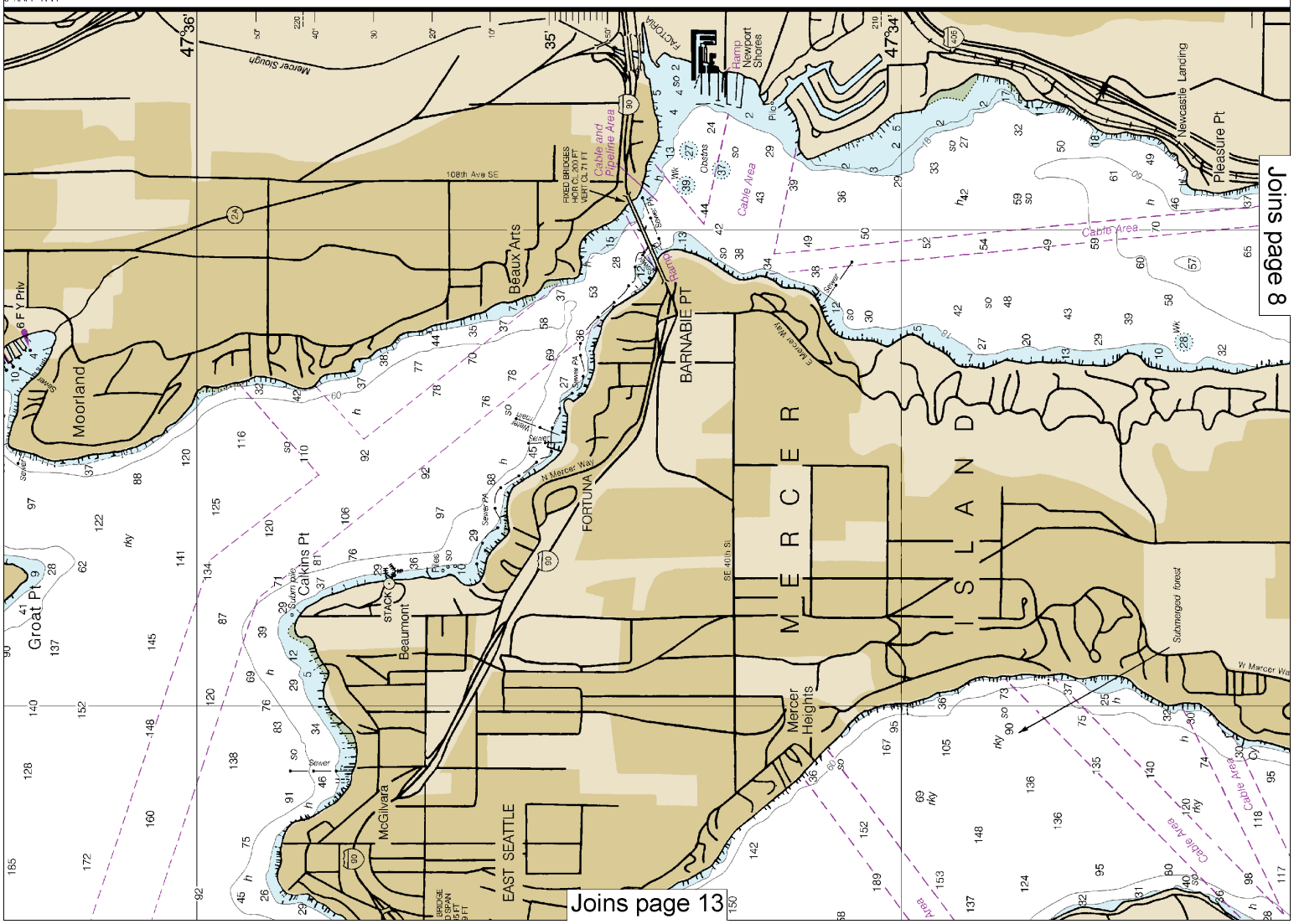
PLACE		Height referred to datum of soundings (MLLW)		
NAME	(LAT/LONG)	Mean Higher High Water	Mean High Water	Mean Low Water
		feet	feet	feet
Port Angeles	(48°08'N/123°26'W)	7.1	6.5	1.9
Port Townsend	(48°07'N/122°45'W)	8.5	7.8	2.5
Seattle	(47°36'N/122°20'W)	11.4	10.5	2.8

Dashes (- - -) located in datum columns indicate unavailable datum values for a tide station. Real-time water levels, tide predictions, and tidal current predictions are available on the Internet from http://tidesandcurrents.noaa.gov.

(Aug 2012)

Numerou
122° 12' 57.4"W
47° 30' 09.2"N/1
hazards to surfa
Numerou
122° 12' 32.9"W
47° 30' 44.7"N/1
hazards to surfa
Numerou
122° 12' 15.1"W
47°30'18.0"N/122
not charted.

3 KAPP 1711



TIMES

HOURS
pm M-F*

soundings (MLLW)

	Mean Low Water
	feet
	1.9
	2.5
	2.8

l-time water levels,
tents.noaa.gov.

BROADCASTS OF MARINE WEATHER FORECASTS AND WARNINGS BY MARINE RADIOTELEPHONE STATIONS

CITY	STATION	FREQ.	BROADCAST TIMES - PST	SPECIAL WARNING
Seattle, Wash.	NMW-43	157.1 MHz	9:30 AM	*On receipt

* Preceded by announcement on 2182 kHz and 156.8 MHz
Distress calls for small craft are made on 2182 kHz or channel 16 (156.80 MHz) VHF.

NOTE E

Numerous obstructions, located within the parameters from 47° 30' 27.3" N/ 122° 12' 57.4"W to 47° 30' 27.7"N/122° 12' 42.6"W to 47°30'10.0N"/122°12'38.1"W to 47° 30' 09.2'N/122° 12' 55.6"W to 47° 30' 08.6'N/122° 12' 55.2"W are not considered hazards to surface navigation and are not charted.

Numerous obstructions, located within the parameters from 47° 31' 00.5" N/ 122° 12' 32.9"W to 47° 30' 54.5"N/122° 12' 50.4"W to 47°30'38.7"N/122°12'36.9"W to 47° 30' 44.7"N/122° 12' 21.0"W to 47° 30' 56.2'N/122° 12' 28.1"W are not considered hazards to surface navigation and are not charted.

Numerous obstructions, located within the parameters from 47° 30' 41.5" N/ 122° 12' 15.1"W to 47° 30' 35.4"N/122° 12' 36.8"W to 47°30'15.9"N/122°12'13.3"W, to 47°30'18.0"N/122°12'08.1"W, are not considered hazards to surface navigation and are not charted.

PUBLIC BOATING INSTRUCTION PROGRAMS

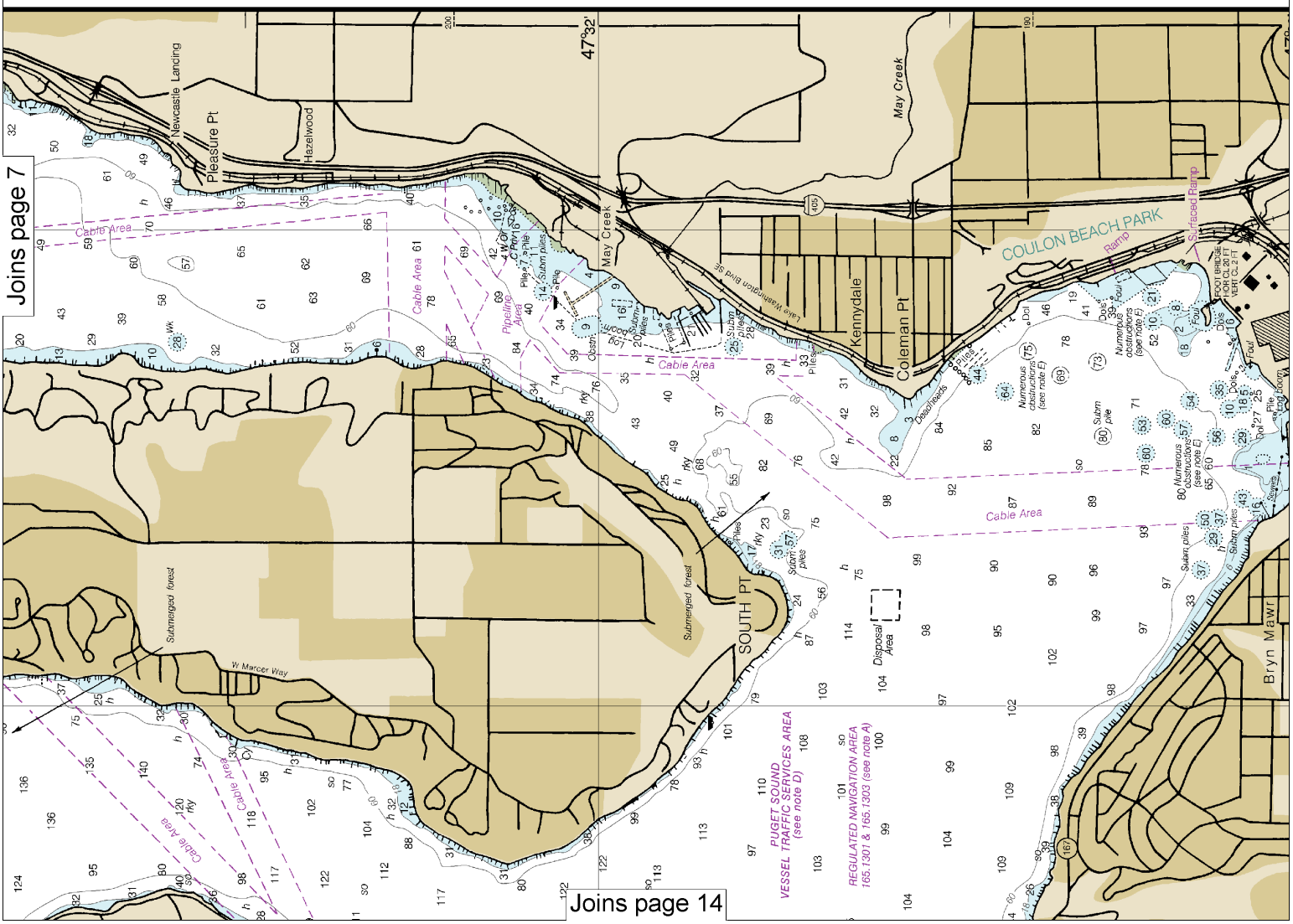
The United States Power Squadrons (USPS) and U.S. Coast Guard Auxiliary (USCGAUX), national organizations of boatmen, conduct extensive boating instruction programs in communities throughout the United States. For information regarding these educational courses, contact the following sources:

USPS - Local Squadron Commander or USPS Headquarters, Post Office Box 30423, Raleigh, N. C. 27612. 919-821-0281.

USCGAUX - 13th Coast Guard District, 915 Second Ave., Seattle, WA 98174-1067, Tel. 206-553-7390 or USCG Headquarters (G-BAU), Washington, D.C. 20593-0001.

Additional information can be obtained at nauticalcharts.noaa.gov.

Ⓟ Pump out facilities



8

Note: Chart grid lines are aligned with true north.

Printed at reduced scale. ~~SCALE 1:10,000~~ See Note on page 5.

Nautical Miles
0
Yards
200 0 200 400 600 800 1000 1200

NAUTICAL CHART 18447

THE NATION'S CHARTMAKER SINCE 1807

WASHINGTON

LAKE WASHINGTON SHIP CANAL AND LAKE WASHINGTON

HEIGHTS

Vertical clearances above the locks are referenced to Mean Water Level of the lakes which is 21 feet above MLLW.

AUTHORITIES

Hydrography and topography by the National Ocean Service, Coast Survey, with additional data from the Corps of Engineers, Geological Survey, and U.S. Coast Guard.

SUPPLEMENTAL INFORMATION

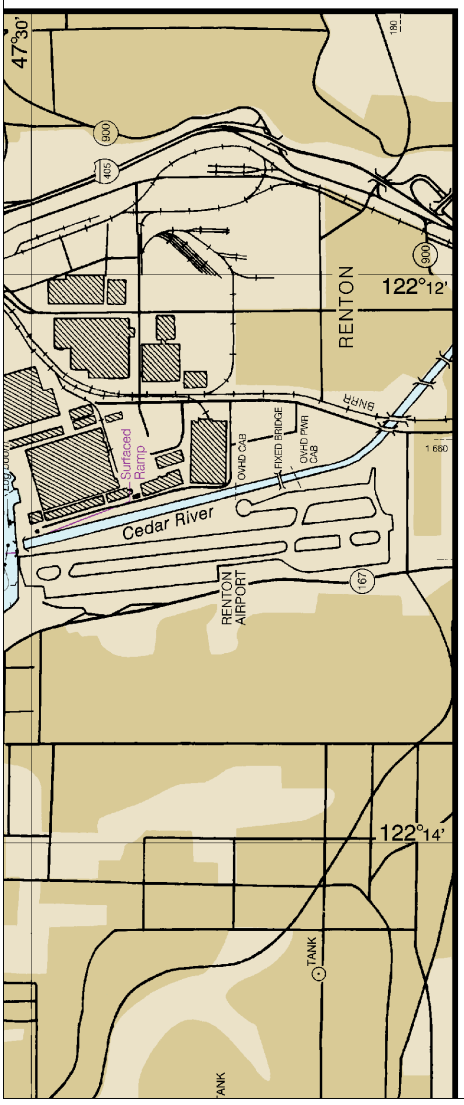
Consult U.S. Coast Pilot 7 for important supplemental information.

CAUTION

This chart has been corrected from the Notice to Mariners (NM) published weekly by the National Geospatial-Intelligence Agency and the Local Notice to Mariners (LNM) issued periodically by each U.S. Coast Guard district to the dates shown in the lower left hand corner. Chart updates corrected from Notice to Mariners published after the dates shown in the lower left hand corner are available at nauticalcharts.noaa.gov.

HORIZONTAL DATUM

The horizontal reference datum of this chart is North American Datum of 1983 (NAD 83), which for charting purposes is considered equivalent to the World Geodetic System 1984 (WGS 84). Geographic positions referred to the North American Datum of 1927 must be corrected an average of 0.646" southward and 4.450" westward to agree with this chart.



Published at Washington, D.C.
U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL OCEAN SERVICE
COAST SURVEY

MERCATOR PROJECTION AT SCALE 1:10,000 & 1:25,000

SOUNDINGS IN FEET

AT MEAN LOWER LOW WATER below the locks AND AT LOW WATER OF LAKE which is 20 FEET above the plane of MLLW in Puget Sound.

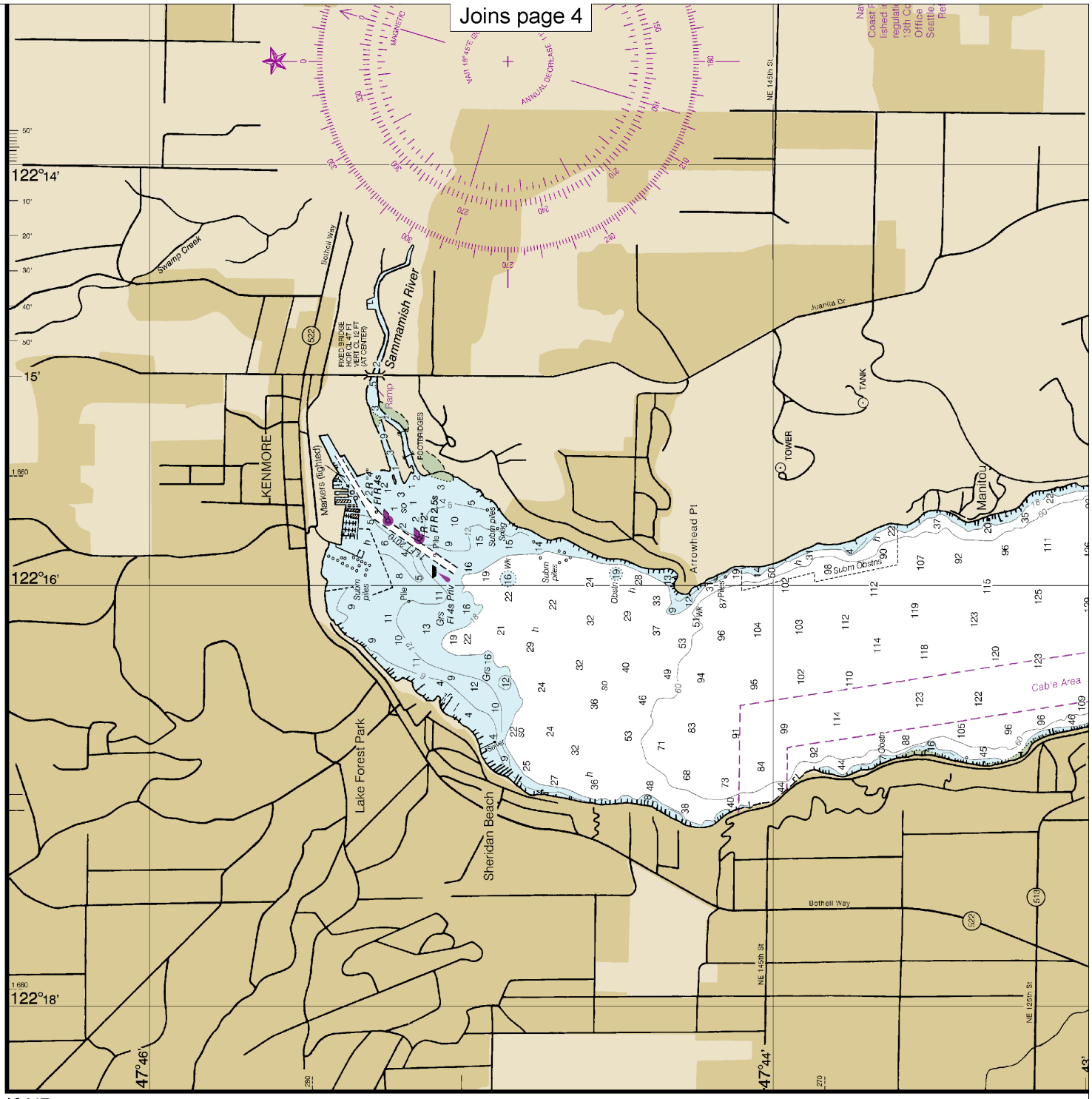
North American Datum of 1983
(World Geodetic System 1984)

Joins page 15

SIDE B

SIDE B

Joins page 4



18447

Joins page 16

10

Note: Chart grid lines are aligned with true north.

Printed at reduced scale. ~~SCALE 1:10,000~~

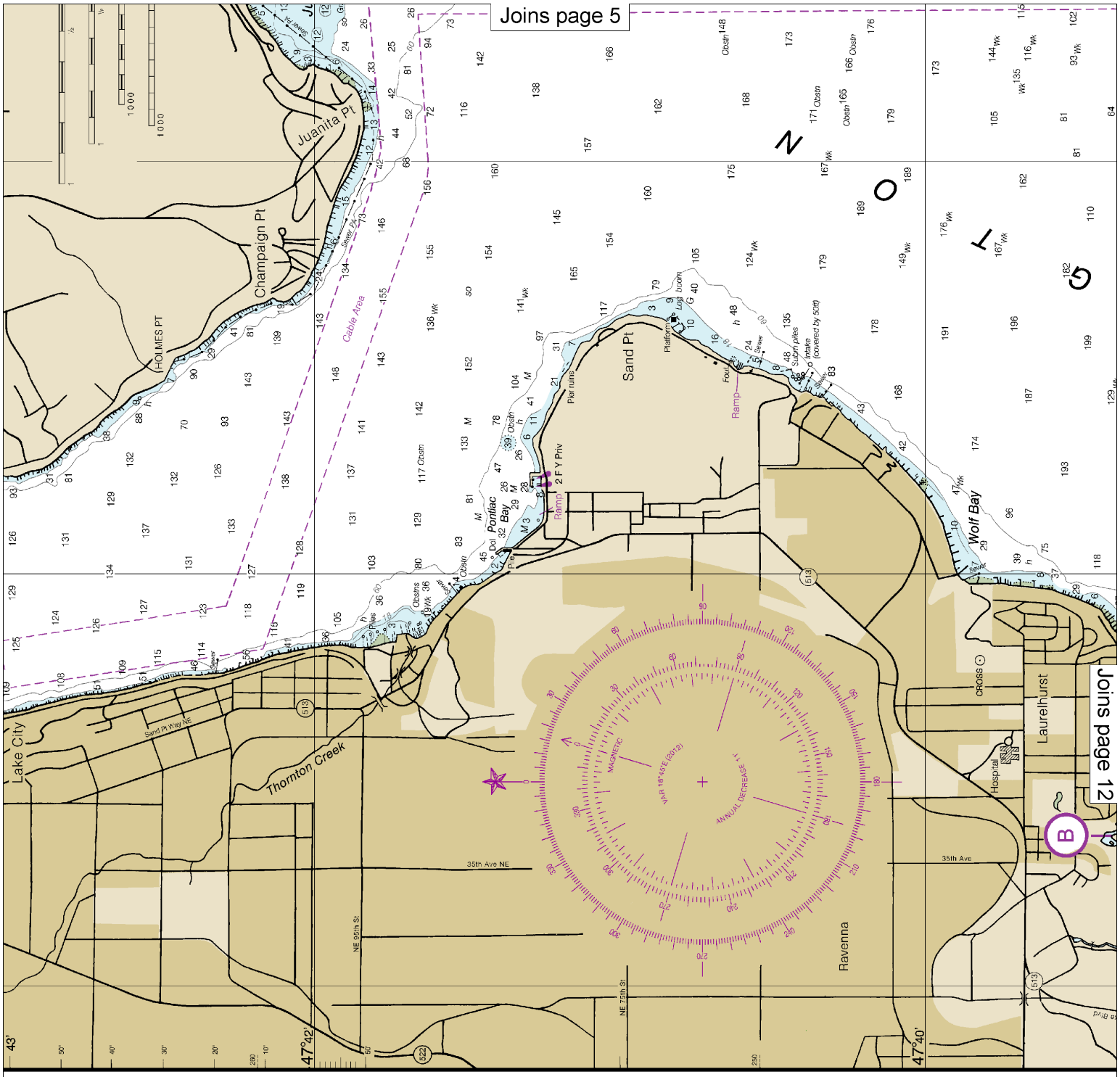
Nautical Miles

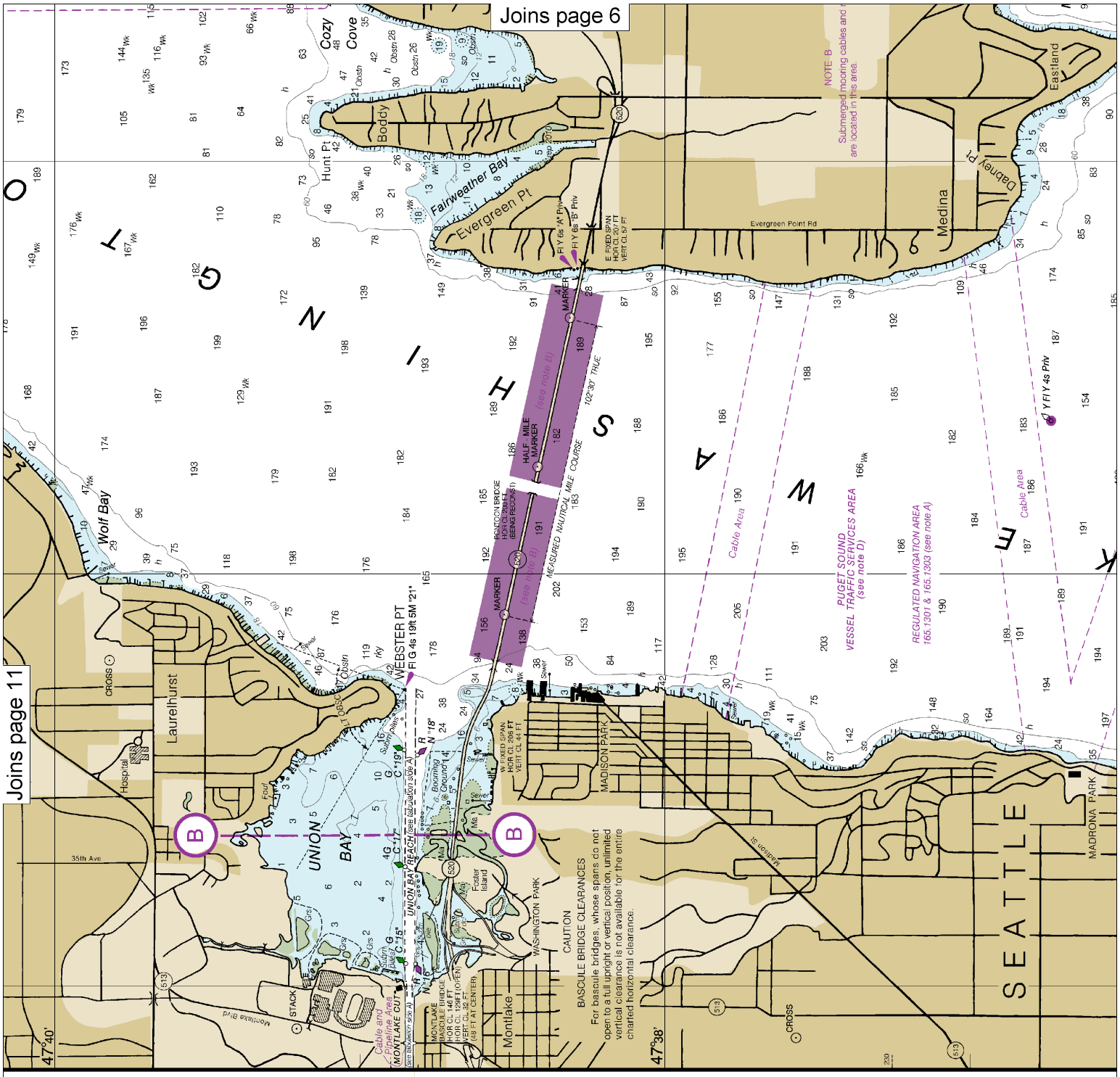
0

Yards

200 0 200 400 600 800 1000 1200

See Note on page 5.


Joins page 5
Joins page 12
Joins page 17
Juanita Pt
Champaign Pt
HOLMES PT
Cable Area
Sand Pt
Pontiac Bay
Wolf Bay
Lake City
Thornton Creek
Sand Pt Way NE
35th Ave NE
NE 95th St
NE 75th St
Ravenna
Laurelhurst
35th Ave
Hospital
cross
Ramp
Pier runne
2 F Y Priv
Platforms
Log boom
Foul
Intake (covered by Soft)
Subm piles
Sewer
Obstn
Obstns
Piles
Dol
Pier
MAGNETIC
ANNUAL DECREASE
VAR 16°45'E (2012)
47°42'
47°40'
43'
513
522
N
O
G
T



Note: Chart grid lines are aligned with true north.

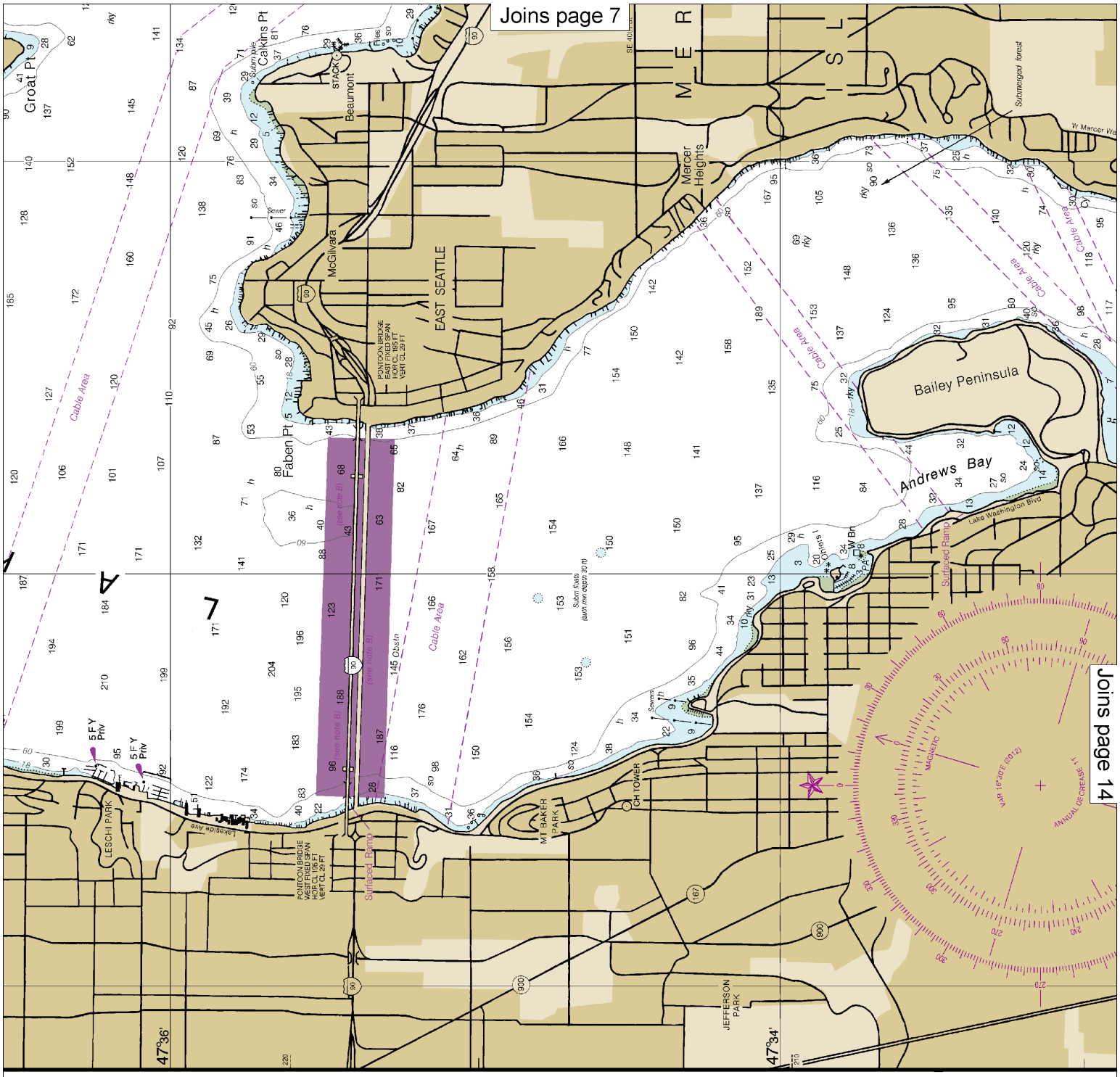
Printed at reduced scale. ~~SCALE 1:10,000~~ See Note on page 5.

Nautical Miles

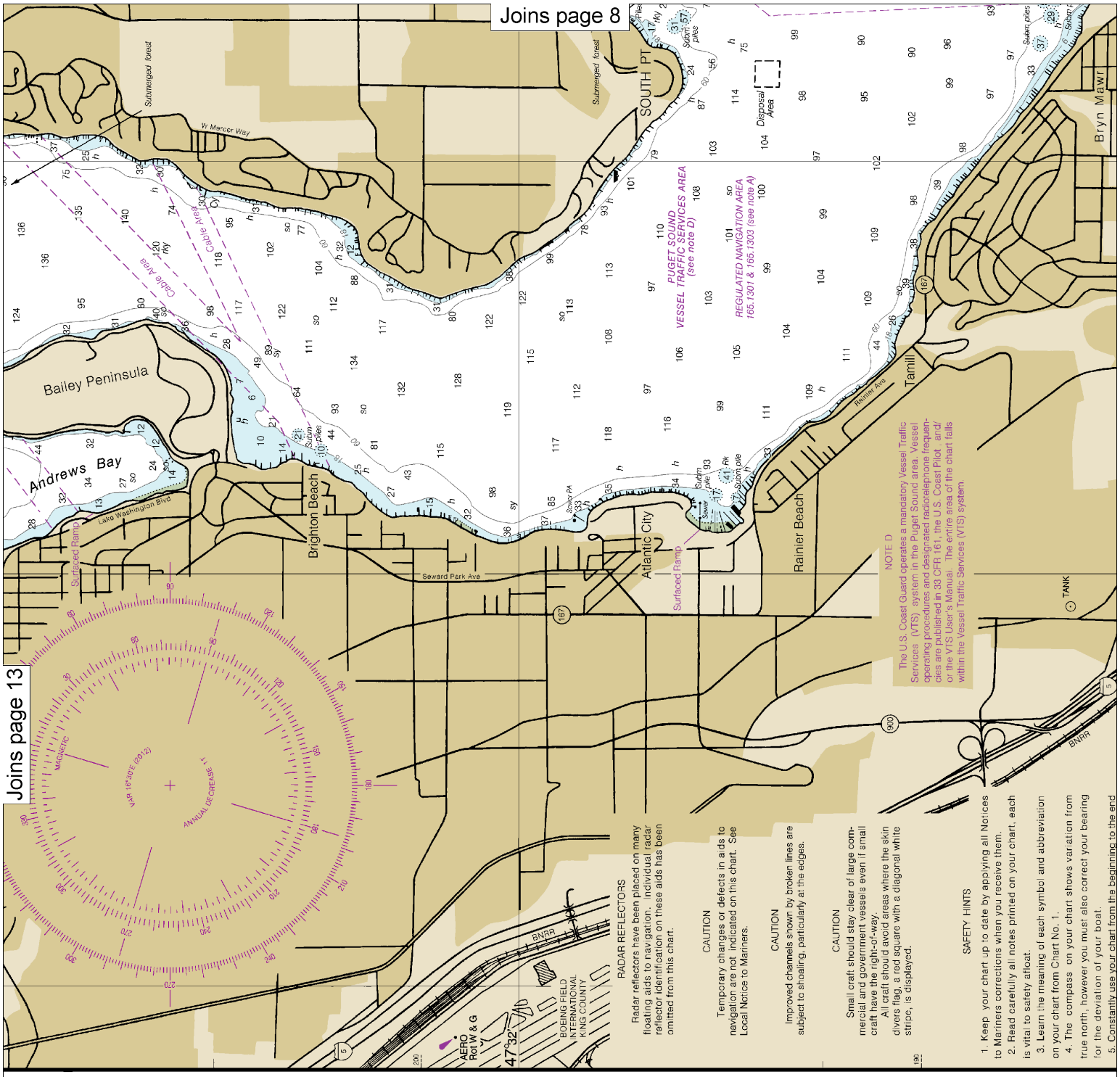
0

Yards

200 0 200 400 600 800 1000 1200


Joins page 7
Joins page 14
Joins page 19
MERCER ISL
Mercer Heights
EAST SEATTLE
Bailey Peninsula
Andrews Bay
Lake Washington Blvd
Beaumont
McGilvra
Faben Pt
Cakins Pt
Groat Pt
Submerged forest
Cable Area
Surfaced Ramp
LESCHI PARK
MT BAKER PARK
JEFFERSON PARK
CH TOWER
PONTOON BRIDGE
WEST FIXED SPAN
HOR CL 135 FT
VERT CL 29 FT
PONTOON BRIDGE
EAST FIXED SPAN
HOR CL 135 FT
VERT CL 29 FT
5 F Y
Priv
47°36'
47°34'

Joins page 8



Joins page 13

Joins page 20

Note: Chart grid lines are aligned with true north.

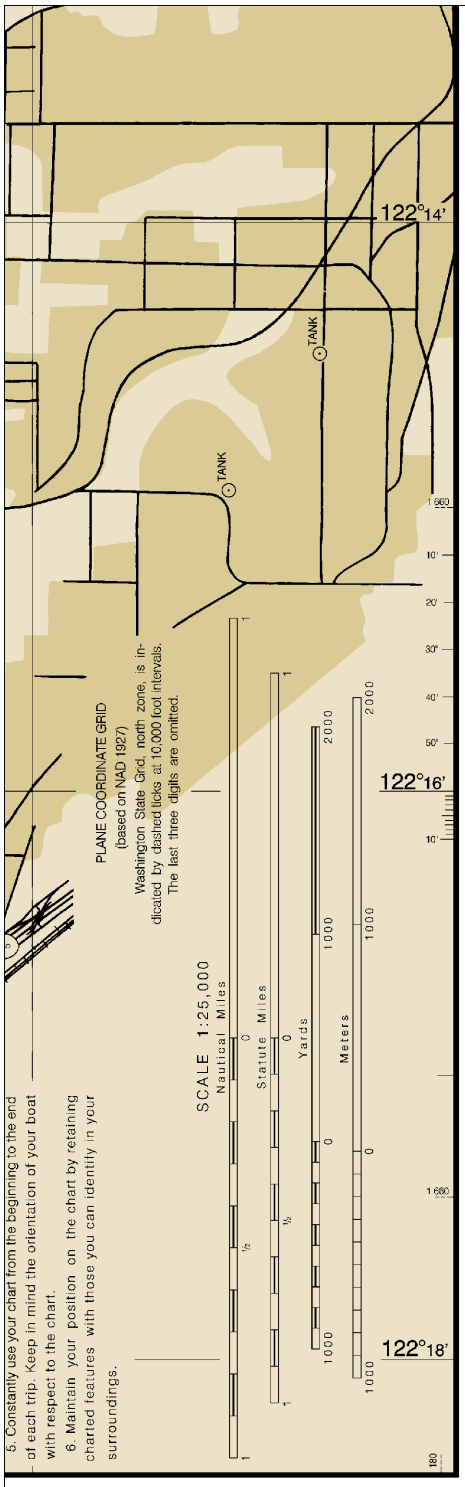
Printed at reduced scale. ~~SCALE 1:10,000~~

Nautical Miles 0

Yards 200 0 200 400 600 800 1000 1200

See Note on page 5.

Joins page 9



NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL OCEAN SERVICE
COAST SURVEY

MERCATOR PROJECTION AT SCALE 1:10,000 & 1:25,000

SOUNDINGS IN FEET

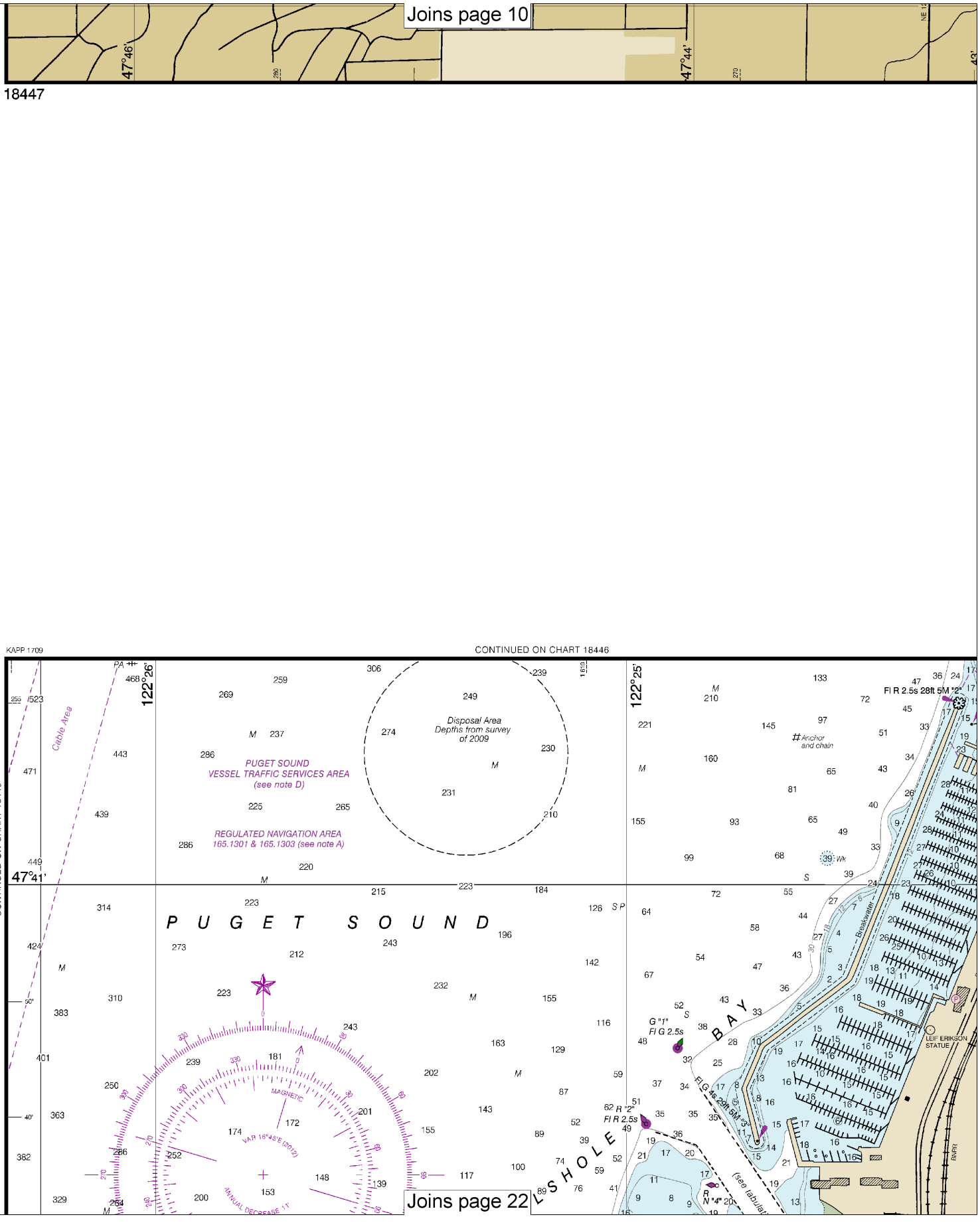
AT MEAN LOWER LOW WATER below the locks AND AT LOW WATER OF LAKE which is 20 FEET above the plane of MLLW in Puget Sound.

North American Datum of 1983
(World Geodetic System 1984)

SIDE B

18447

Joins page 21



16

Note: Chart grid lines are aligned with true north.

Printed at reduced scale. ~~SCALE 1:10,000~~

Nautical Miles

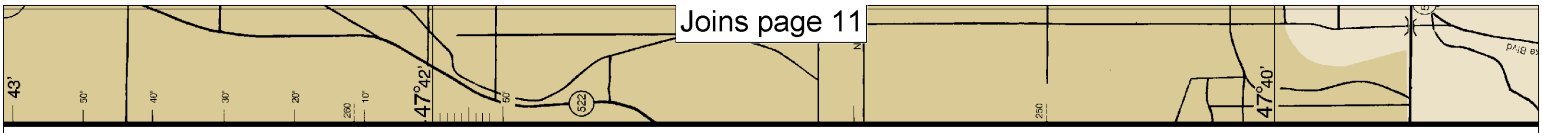
0

Yards

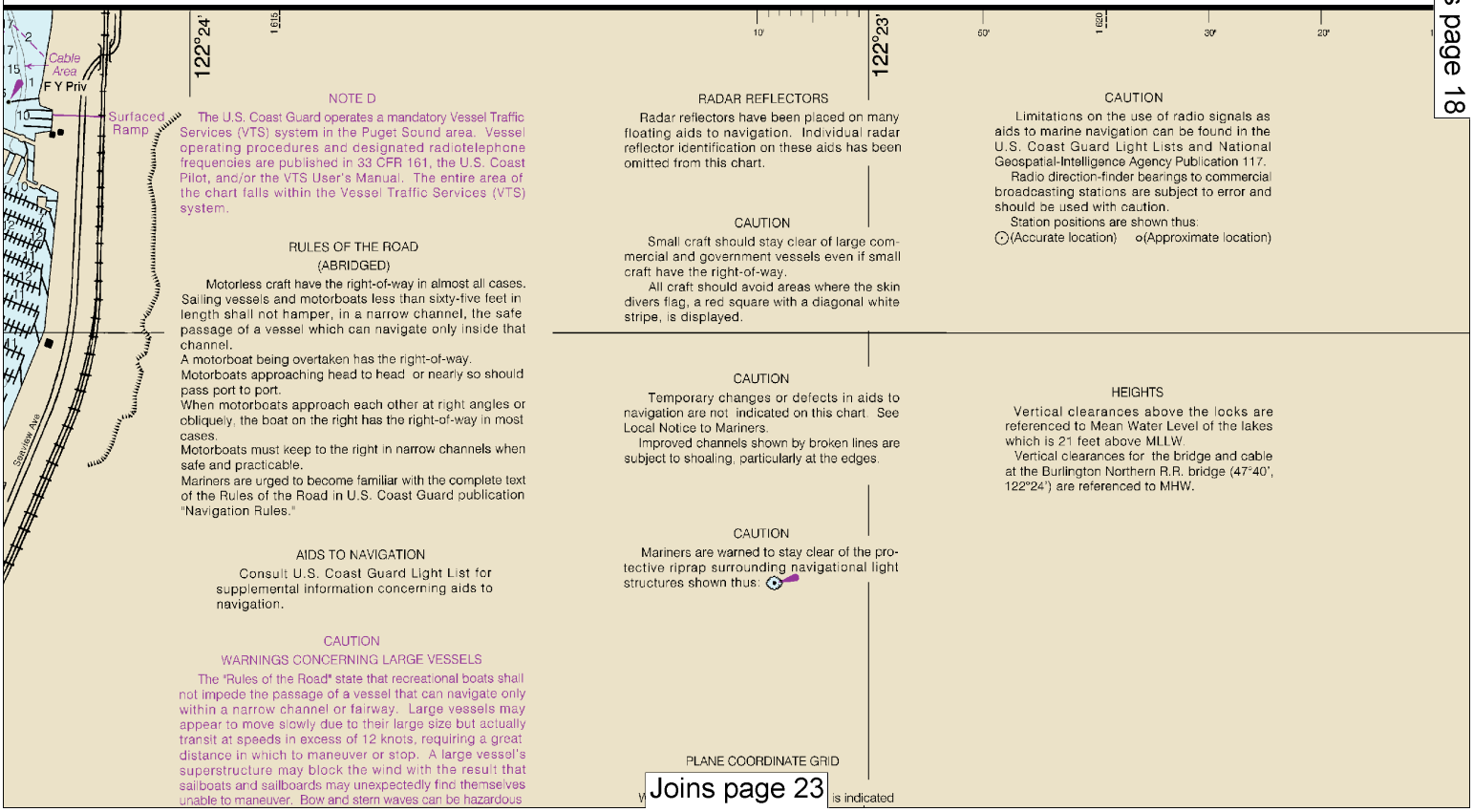
200 0 200 400 600 800 1000 1200

See Note on page 5.

Joins page 11



Joins page 18



NOTE D

The U.S. Coast Guard operates a mandatory Vessel Traffic Services (VTS) system in the Puget Sound area. Vessel operating procedures and designated radiotelephone frequencies are published in 33 CFR 161, the U.S. Coast Pilot, and/or the VTS User's Manual. The entire area of the chart falls within the Vessel Traffic Services (VTS) system.

RULES OF THE ROAD

(ABRIDGED)

Motorless craft have the right-of-way in almost all cases.
Sailing vessels and motorboats less than sixty-five feet in length shall not hamper, in a narrow channel, the safe passage of a vessel which can navigate only inside that channel.
A motorboat being overtaken has the right-of-way.
Motorboats approaching head to head or nearly so should pass port to port.
When motorboats approach each other at right angles or obliquely, the boat on the right has the right-of-way in most cases.
Motorboats must keep to the right in narrow channels when safe and practicable.
Mariners are urged to become familiar with the complete text of the Rules of the Road in U.S. Coast Guard publication "Navigation Rules."

AIDS TO NAVIGATION

Consult U.S. Coast Guard Light List for supplemental information concerning aids to navigation.

CAUTION

WARNINGS CONCERNING LARGE VESSELS

The "Rules of the Road" state that recreational boats shall not impede the passage of a vessel that can navigate only within a narrow channel or fairway. Large vessels may appear to move slowly due to their large size but actually transit at speeds in excess of 12 knots, requiring a great distance in which to maneuver or stop. A large vessel's superstructure may block the wind with the result that sailboats and sailboards may unexpectedly find themselves unable to maneuver. Bow and stern waves can be hazardous

RADAR REFLECTORS

Radar reflectors have been placed on many floating aids to navigation. Individual radar reflector identification on these aids has been omitted from this chart.

CAUTION

Small craft should stay clear of large commercial and government vessels even if small craft have the right-of-way.
All craft should avoid areas where the skin divers flag, a red square with a diagonal white stripe, is displayed.

CAUTION

Temporary changes or defects in aids to navigation are not indicated on this chart. See Local Notice to Mariners.
Improved channels shown by broken lines are subject to shoaling, particularly at the edges.

CAUTION

Mariners are warned to stay clear of the protective riprap surrounding navigational light structures shown thus:

PLANE COORDINATE GRID

Joins page 23

is indicated

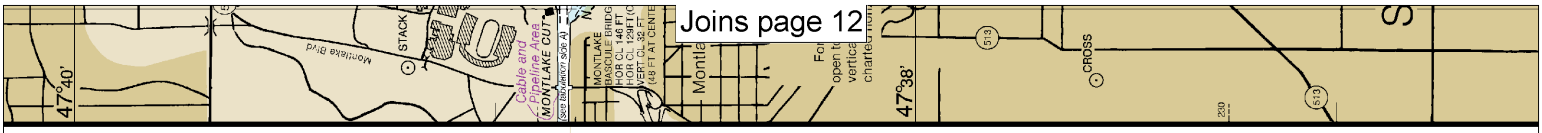
CAUTION

Limitations on the use of radio signals as aids to marine navigation can be found in the U.S. Coast Guard Light Lists and National Geospatial-Intelligence Agency Publication 117.
Radio direction-finder bearings to commercial broadcasting stations are subject to error and should be used with caution.
Station positions are shown thus:
⊙(Accurate location) o(Approximate location)

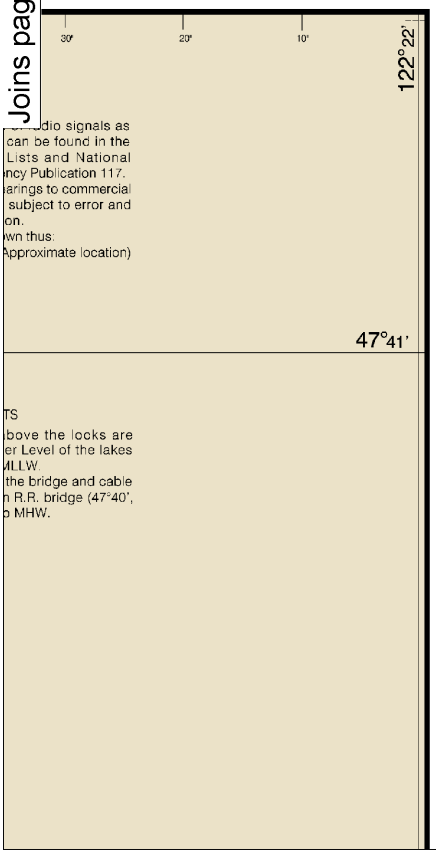
HEIGHTS

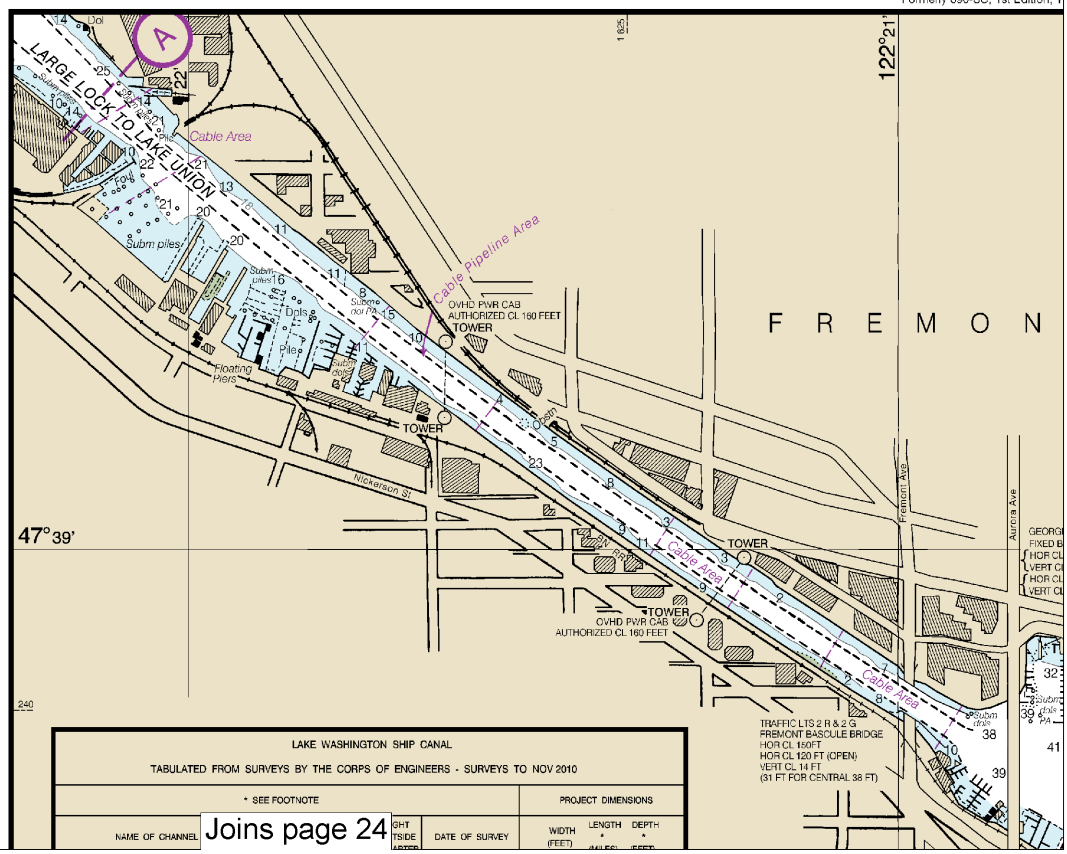
Vertical clearances above the locks are referenced to Mean Water Level of the lakes which is 21 feet above MLLW.
Vertical clearances for the bridge and cable at the Burlington Northern R.R. bridge (47°40', 122°24') are referenced to MHW.

Joins page 12



Joins page 17





Joins page 24

Note: Chart grid lines are aligned with true north.

Printed at reduced scale. ~~SCALE 1:10,000~~

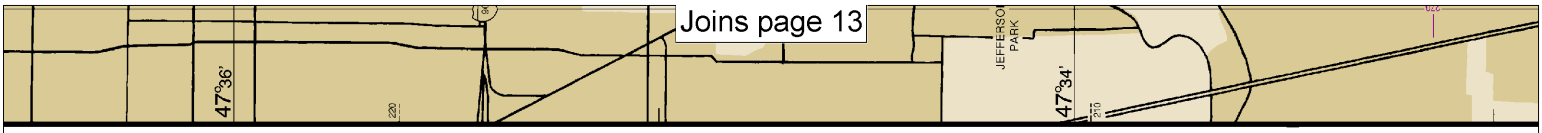
Nautical Miles

0

Yards

200 0 200 400 600 800 1000 1200

See Note on page 5.



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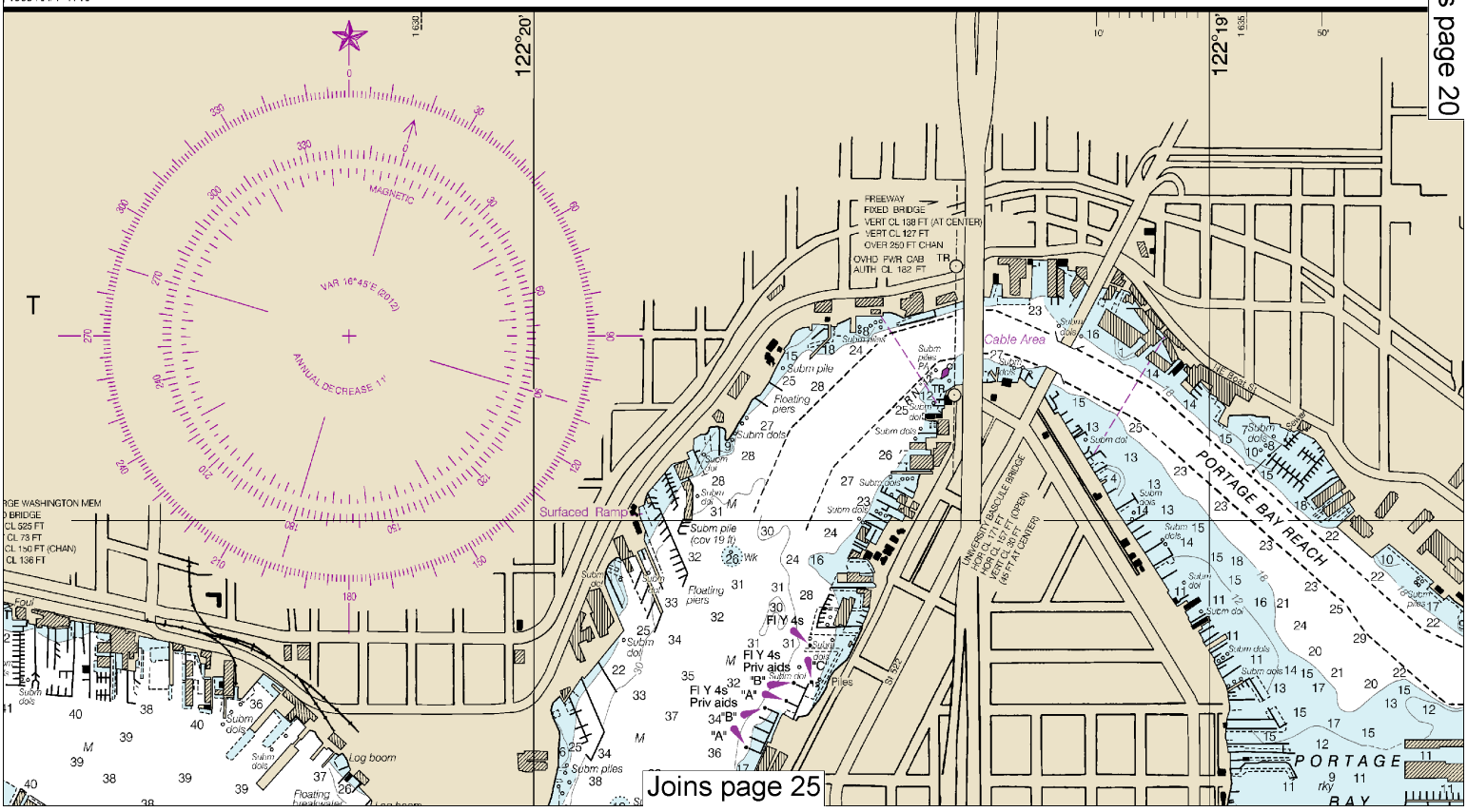
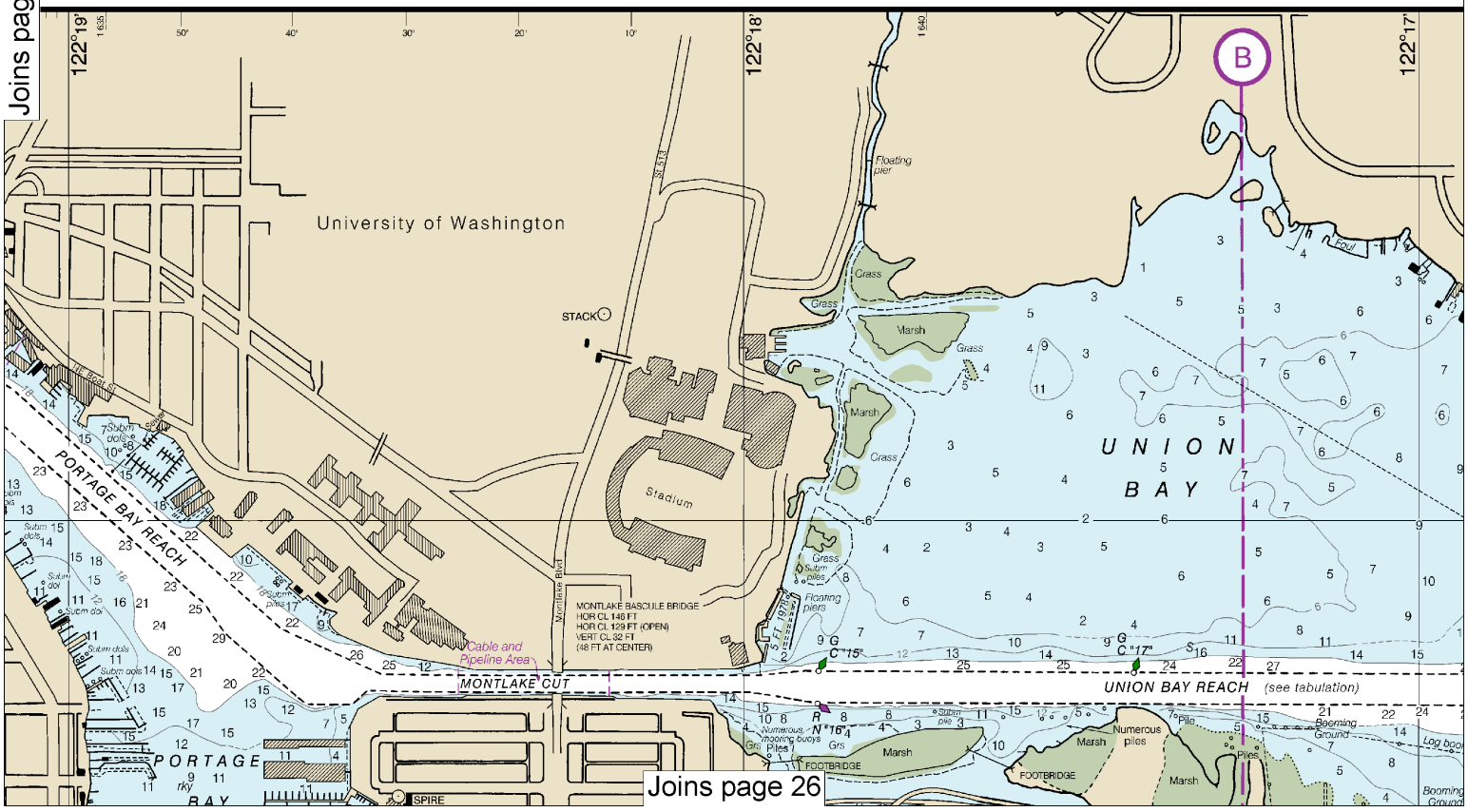


Joins page 14

Joins page 19



Joins page 26

Note: Chart grid lines are aligned with true north.

Printed at reduced scale. ~~SCALE 1:10,000~~

Nautical Miles

0

Yards

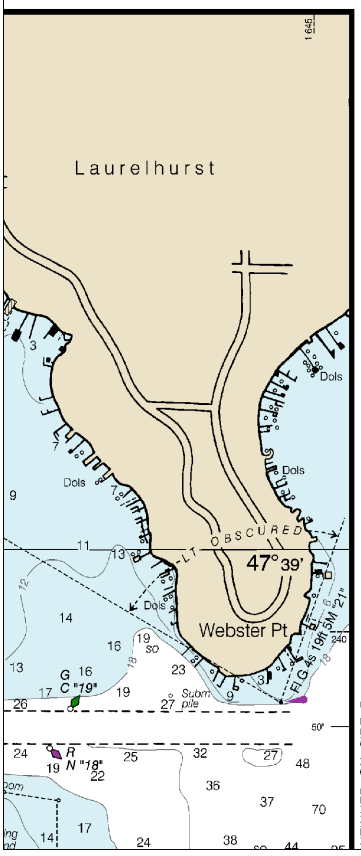
200 0 200 400 600 800 1000 1200

See Note on page 5.

Joins page 15

5. Constantly us
of each trip. Ke
with respect to
6. Maintain yo
charted feature
surroundings.

18447



CONTINUED ON SIDE B

ABBREVIATIONS (For complete list of Symbols and Abbreviations, see Chart No. 1.)

Aids to Navigation (lights are white unless otherwise indicated):

AERO aeronautical	G green	Mo morse code	R TR radio tower
Al alternating	IQ interrupted quick	N nun	Rot rotating
B black	Iso isophase	OBSC obscured	s seconds
Bn beacon	LT HO lighthouse	Oc occulting	SEC sector
C can	M nautical mile	Or orange	St M statute miles
DIA diaphone	m minutes	Q quick	VQ very quick
F fixed	MICRO TR microwave tower	R red	W white
Fl flashing	Mkr marker	Ra Ref radar reflector	WHIS whistle
		R Bn radiobeacon	Y yellow

Bottom characteristics:

Bldrs boulders	Co coral	gy grey	Oys oysters	so soft
bk broken	G gravel	h hard	Rk rock	Sh shells
Cy clay	Grs grass	M mud	S sand	sy sticky

Miscellaneous:

AUTH authorized	Obstn obstruction	PD position doubtful	Subm submerged
ED existence doubtful	PA position approximate	Rep reported	

(21) Wreck, rock, obstruction, or shoal swept clear to the depth indicated.
(2) Rocks that cover and uncover, with heights in feet above datum of soundings.

WARNING

The prudent mariner will not rely solely on any single aid to navigation, particularly on floating aids. See U.S. Coast Guard Light List and U.S. Coast Pilot for details.

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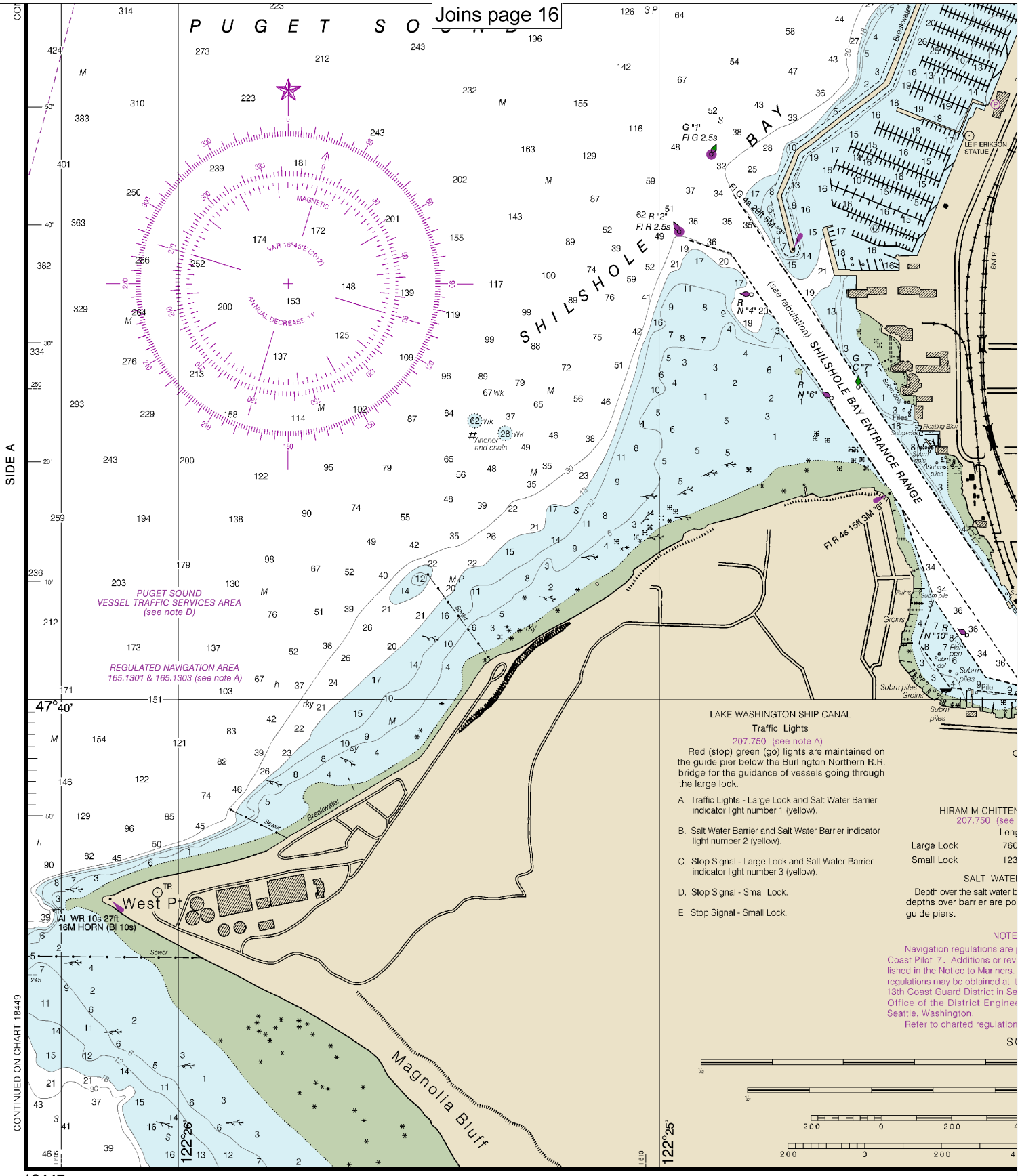
OF WIND SPEED FROM SEA CONDITION



30th Ed., Sep. 2012. Last Correction: 10/13/2016. Cleared through:
LNM: 4816 (11/29/2016), NM: 5016 (12/10/2016), CHS: 1116 (11/25/2016)

Note: Chart grid lines are aligned with true north.

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Nautical Miles

0

Yards

200 0 200 400 600 800 1000 1200

See Note on page 5.

A motorboat being overtaken has the right-of-way.
Motorboats approaching head to head or nearly so should pass port to port.
When motorboats approach each other at right angles or obliquely, the boat on the right has the right-of-way in most cases.
Motorboats must keep to the right in narrow channels when safe and practicable.
Mariners are urged to become familiar with the complete text of the Rules of the Road in U.S. Coast Guard publication "Navigation Rules."

AIDS TO NAVIGATION

Consult U.S. Coast Guard Light List for supplemental information concerning aids to navigation.

CAUTION

WARNINGS CONCERNING LARGE VESSELS

The "Rules of the Road" state that recreational boats shall not impede the passage of a vessel that can navigate only within a narrow channel or fairway. Large vessels may appear to move slowly due to their large size but actually transit at speeds in excess of 12 knots, requiring a great distance in which to maneuver or stop. A large vessel's superstructure may block the wind with the result that sailboats and sailboards may unexpectedly find themselves unable to maneuver. Bow and stern waves can be hazardous to small vessels. Large vessels may not be able to see small craft close to their bows.

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Temporary changes or defects in aids to navigation are not indicated on this chart. See Local Notice to Mariners.

Improved channels shown by broken lines are subject to shoaling, particularly at the edges.

CAUTION

Mariners are warned to stay clear of the protective riprap surrounding navigational light structures shown thus:

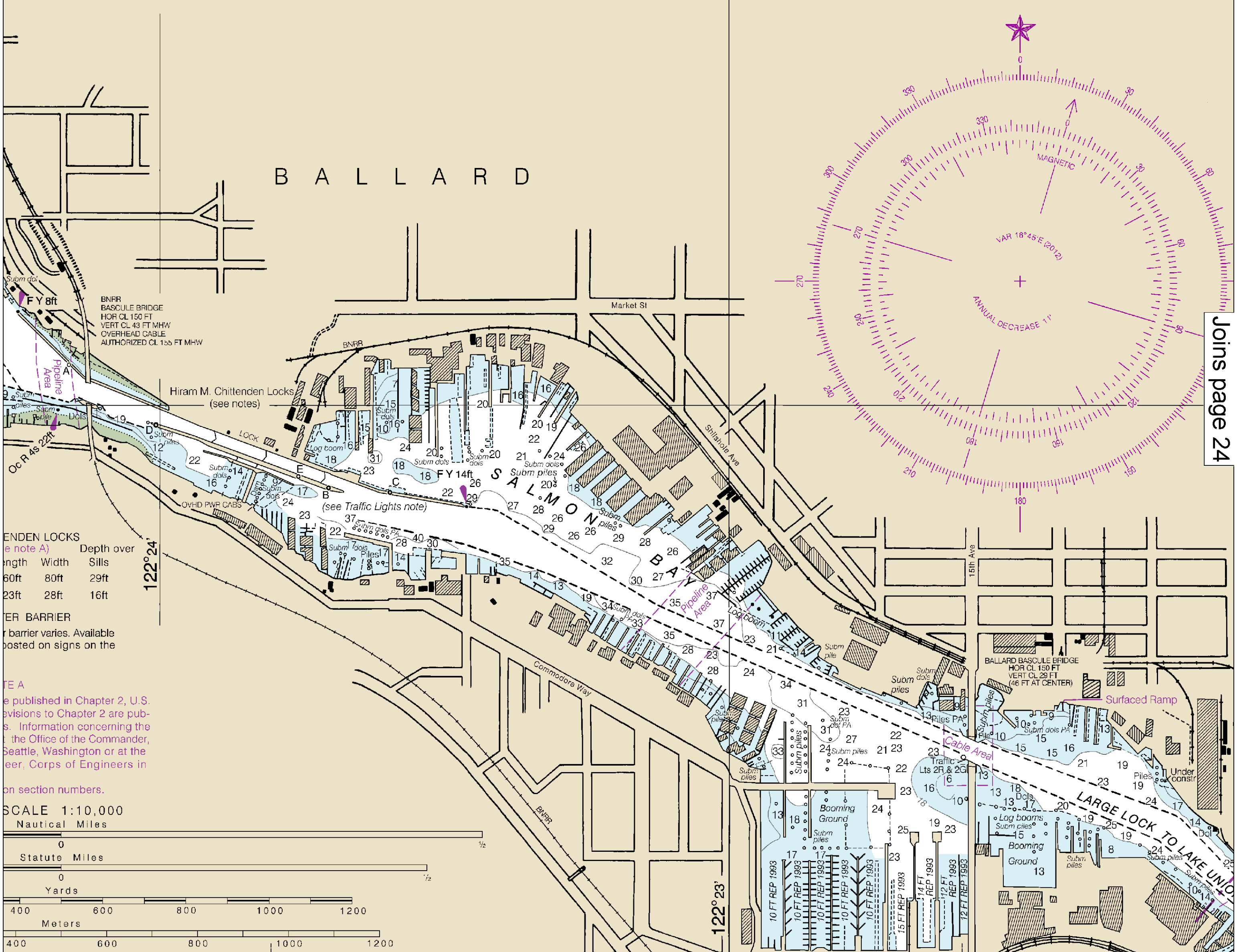
PLANE COORDINATE GRID

(based on NAD 1927)

Washington State Grid, north zone, is indicated on this chart at 5,000 foot intervals thus:
The last three digits are omitted.

HEIGHTS

Vertical clearances above the locks are referenced to Mean Water Level of the lakes which is 21 feet above MLLW.
Vertical clearances for the bridge and cable at the Burlington Northern R.R. bridge (47°40', 122°24') are referenced to MHW.



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TS
bove the locks are
er Level of the lakes
MLLW.
the bridge and cable
n R.R. bridge (47°40',
o MHW.

Joins page 23

47°40'

47°39'

47°38'

122°22'

122°21'

LAKE WASHINGTON SHIP CANAL

TABULATED FROM SURVEYS BY THE CORPS OF ENGINEERS - SURVEYS TO NOV 2010

* SEE FOOTNOTE					PROJECT DIMENSIONS		
NAME OF CHANNEL	LEFT OUTSIDE QUARTER	MIDDLE HALF OF CHANNEL	RIGHT OUTSIDE QUARTER	DATE OF SURVEY	WIDTH (FEET)	LENGTH * (MILES)	DEPTH * (FEET)
SHILSHOLE BAY ENTRANCE RANGE	A 15.3	26.9	B 2.7	8,9-96	300-100	1.0	34
LARGE LOCK TO LAKE UNION	21.0	26.0	21.0	11-10	100-300	2.2	30
PORTAGE BAY REACH	23.0	25.0	21.0	11-10	350-200	0.8	30
MONTLAKE CUT	17.0	30.0	25.0	11-10	100	0.4	30
UNION BAY REACH	28.0	30.0	18.0	11-10	100-200	0.9	30

A. THE CHANNEL HAS SHOALED ALONG THE EDGE: A DEPTH OF 31.0 FEET WAS AVAILABLE IN THE INSIDE HALF OF THE QUARTER.
B. THE CHANNEL HAS SHOALED ALONG THE EDGE: A DEPTH OF 20.8 FEET WAS AVAILABLE IN THE INSIDE HALF OF THE QUARTER.
* CONTROLLING DEPTHS IN CHANNELS ENTERING FROM SEAWARD IN FEET AT MEAN LOWER LOW WATER BELOW THE LOCKS AND AT LOW REGULATED LAKE LEVEL ABOVE THE LOCKS, PROJECT LENGTHS ARE IN NAUTICAL MILES.
NOTE - CONSULT THE CORPS OF ENGINEERS FOR CHANGES SUBSEQUENT TO THE ABOVE INFORMATION

LAKE WASHINGTON SHIP CANAL
BRIDGE SIGNALS

The signal to open bridges is one prolonged blast followed by one short blast of whistle or horn for all bridges across the Lake Washington Ship Canal.

Five short blasts of whistle or horn from any bridge indicates the draw is not ready to be opened immediately.

LAKE WASHINGTON SHIP CANAL
SPEED LIMITS

Speed limit is 7 knots from Hiram M. Chittenden Locks to Webster Point Light (Lake Washington), except in Lake Union test area marked by four buoys.

LOCK SIGNALS

The signal to open locks is two long blasts followed by three short blasts of whistle or horn for vessels with tows, and two long blasts followed by two short blasts for all other vessels.

Bridge and navigation regulations, including special regulations for transit over the Salt Water Barrier in the Hiram Chittenden Locks, are published in U.S. Coast Pilot 7.

Copies of the regulations may be obtained at the office of the District Engineer, Corps of Engineers, in Seattle.

Refer to section number 207.750 for navigation regulations and section number 117.795 for bridge regulations.

TRAFFIC LTS 2 R & 2 G
FREMONT BASCULE BRIDGE
HOR CL 150FT
HOR CL 120 FT (OPEN)
VERT CL 14 FT
(31 FT FOR CENTRAL 38 FT)

OVHD PWR CAB
AUTHORIZED CL 160 FEET

BALLARD BASCULE BRIDGE
HOR CL 150 FT
VERT CL 29 FT
(46 FT AT CENTER)

TV TOWER 1009 FT (Fl R Lt)
TV TOWER 1005 FT (Fl R Lt)
TV TOWER 1006 FT (Fl R Lt)

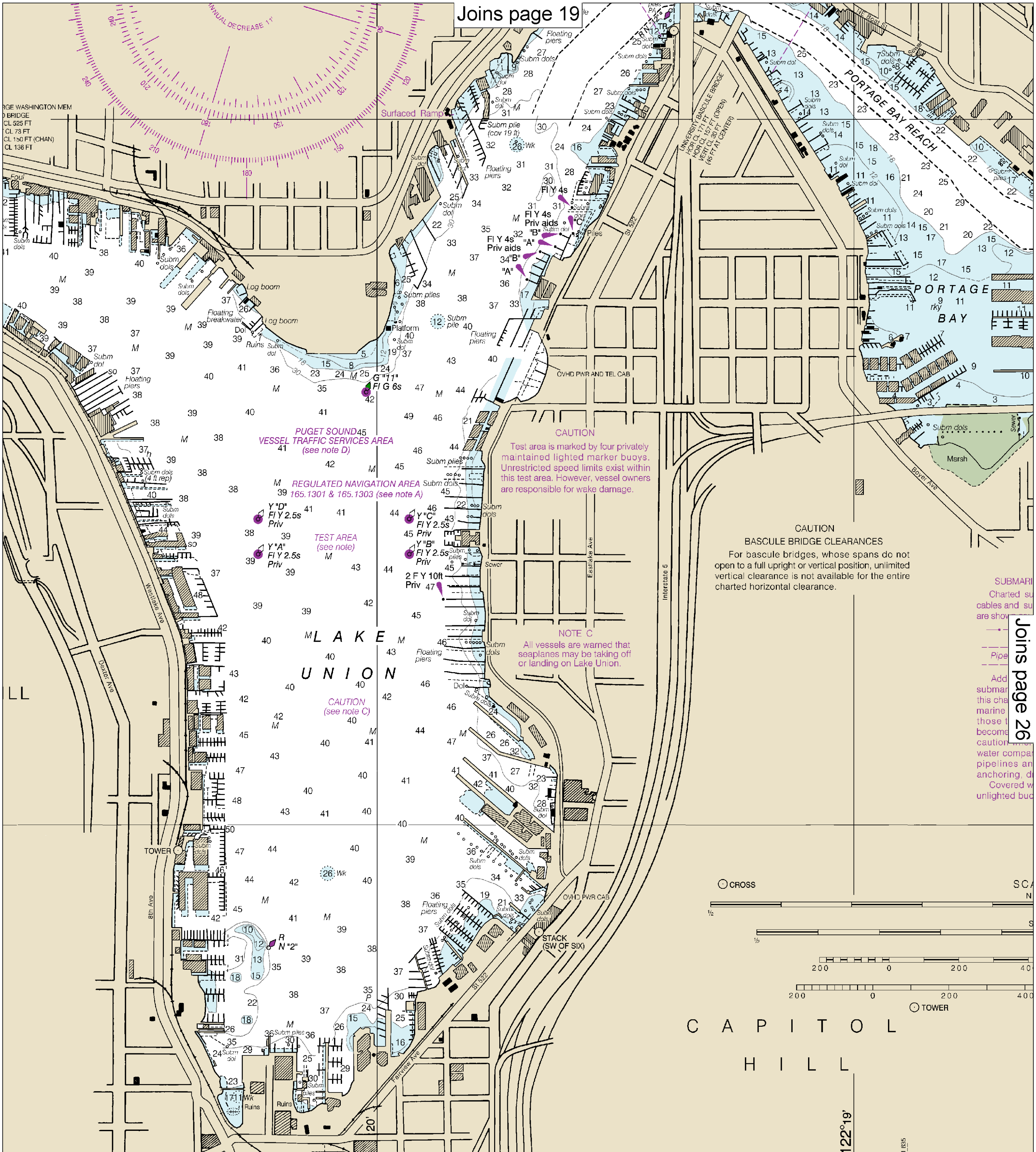
QUEEN ANNE HI

Note: Chart grid lines are aligned with true north.

Printed at reduced scale. ~~SCALE 1:10,000~~

Nautical Miles
0
Yards
200 0 200 400 600 800 1000 1200

See Note on page 5.



Joins page 19
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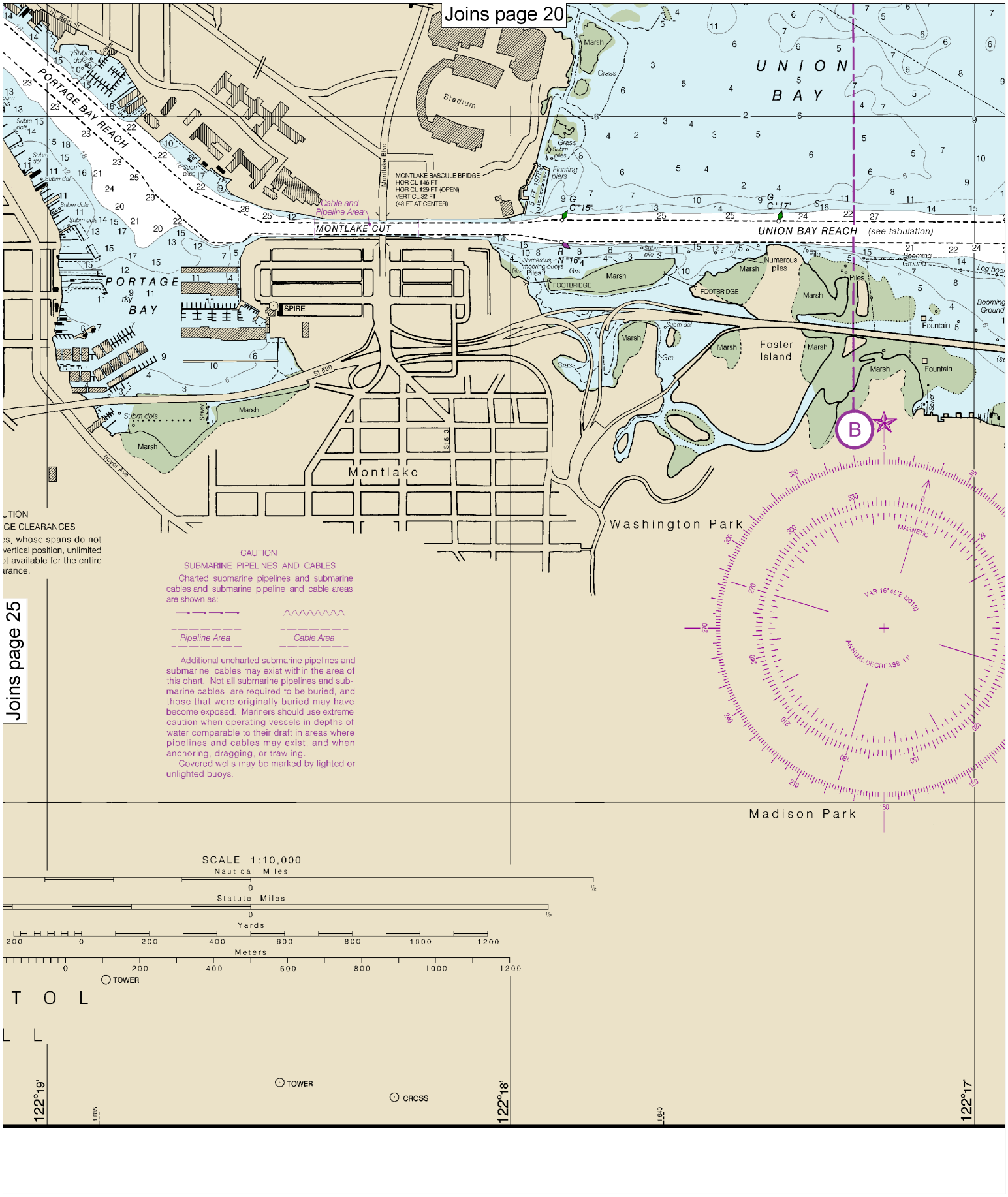
Surfaced Ramp
PORTAGE BAY REACH
PORTAGE BAY
UNIVERSITY BASCULE BRIDGE
HOR CL 171 FT
VERT CL 157 FT (OPEN)
VERT CL 30 FT
(45 FT AT CENTER)
L A K E
U N I O N
PUGET SOUND
VESSEL TRAFFIC SERVICES AREA
(see note D)
REGULATED NAVIGATION AREA
165.1301 & 165.1303 (see note A)
TEST AREA
(see note)
CAUTION
(see note C)
CAUTION
Test area is marked by four privately maintained lighted marker buoys. Unrestricted speed limits exist within this test area. However, vessel owners are responsible for wake damage.
CAUTION
BASCULE BRIDGE CLEARANCES
For bascule bridges, whose spans do not open to a full upright or vertical position, unlimited vertical clearance is not available for the entire charted horizontal clearance.
NOTE C
All vessels are warned that seaplanes may be taking off or landing on Lake Union.
OVHD PWR AND TEL CAB
OVHD PWR CAB
STACK
(SW OF SIX)
TOWER
CROSS
Westlake Ave
Dexter Ave
Eastlake Ave
Fairview Ave
Interstate 5
Boyer Ave
8th Ave
Marsh
C A P I T O L
H I L L
122°19'
20'



Note: Chart grid lines are aligned with true north.

Printed at reduced scale. ~~SCALE 1:10,000~~

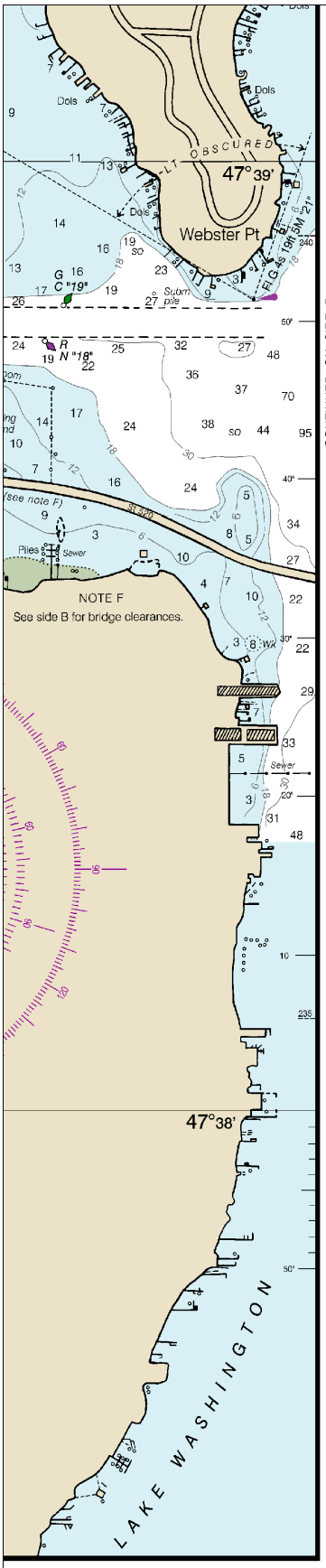
Nautical Miles

0

Yards

200 0 200 400 600 800 1000 1200

See Note on page 5.



CONTINUED ON SIDE B

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minutes
ICRO TR microwave tower
Mkr marker

Q quick
R red
Ra Ref radar reflector
R Bn radiobeacon

VQ very quick
W white
WHIS whistle
Y yellow

Bottom characteristics:

Blds boulders
bk broken
Cy clay
Co coral
G gravel
Grs grass
gy gray
h hard
M mud
Oys oysters
Rk rock
S sand
so soft
Sh shells
sy sticky

Miscellaneous:

AUTH authorized
ED existence doubtful
Obstn obstruction
PA position approximate
PD position doubtful
Rep reported
Subm submerged

21. Wreck, rock, obstruction, or shoal swept clear to the depth indicated.
(2) Rocks that cover and uncover, with heights in feet above datum of soundings.

WARNING

The prudent mariner will not rely solely on any single aid to navigation, particularly on floating aids. See U.S. Coast Guard Light List and U.S. Coast Pilot for details.

DETERMINATION OF WIND SPEED FROM SEA CONDITION

Wind Speed (knots)	Wind Description	Sea Conditions	Wind Force (Beaufort)	Probable Wave Height (feet)
0-1	Calm	Sea smooth and mirror-like.	0	-
1-3	Light air	Scale-like ripples without foam crests.	1	¼
4-6	Light breeze	Small, short wavelets; crests have a glassy appearance and do not break.	2	½
7-10	Gentle breeze	Large wavelets; some crests begin to break; foam of glassy appearance. Occasional white foam crests.	3	2
11-16	Moderate breeze	Small waves, becoming longer; fairly frequent white foam crests.	4	4
17-21	Fresh breeze	Moderate waves, taking a more pronounced long form; many white foam crests; there may be some spray.	5	6
22-27	Strong breeze	Large waves begin to form; white foam crests are more extensive everywhere; there may be some spray.	6	10
28-33	Near gale	Sea heaps up and white foam from breaking waves begin to be blown in streaks along the direction of the wind; spindrift begins.	7	14
34-40	Gale	Moderately high waves of greater length; edges of crests break into spindrift; foam is blown in well-marked streaks along the direction of the wind.	8	18

POLLUTION REPORTS

Report all spills of oil and hazardous substances to the National Response Center via 1-800-424-8802 (toll free), or to the nearest U.S. Coast Guard facility if telephone communication is impossible (33 CFR 153).

NOAA encourages users to submit inquiries, discrepancies or comments about this chart at http://www.nauticalcharts.noaa.gov/staff/contact.htm.

COLREGS, 80.1395 (see note A)
International Regulations for Preventing Collisions at Sea, 1972.
The entire area of this chart falls seaward of the COLREGS Demarcation Line.

SIDE A

EMERGENCY INFORMATION

VHF Marine Radio channels for use on the waterways:

Channel 6 – Inter-ship safety communications.
Channel 9 – Communications between boats and ship-to-coast.
Channel 13 – Navigation purposes at bridges, locks, and harbors.
Channel 16 – Emergency, distress and safety calls to Coast Guard and others, and to initiate calls to other vessels. Contact the other vessel, agree to another channel, and then switch.
Channel 22A – Calls between the Coast Guard and the public. Severe weather warnings, hazards to navigation and safety warnings are broadcast here.
Channels 68, 69, 71, 72 and 78A – Recreational boat channels.

Getting and Giving Help — Signal other boaters using visual distress signals (flares, orange flag, lights, arm signals); whistles; horns; and on your VHF radio. You are required by law to help boaters in trouble. Respond to distress signals, but do not endanger yourself.

Distress Call Procedures

- Make sure radio is on.
- Select Channel 16.
- Press/Hold the transmit button.
- Clearly say: "MAYDAY, MAYDAY, MAYDAY."
- Also give: Vessel Name and/or Description; Position and/or Location; Nature of Emergency; Number of People on Board.
- Release transmit button.
- Wait for 10 seconds — If no response Repeat MAYDAY call.

HAVE ALL PERSONS PUT ON LIFE JACKETS!

All Hazards NOAA Weather Radio NOAA's National Weather Service

NOAA Weather Radio All Hazards (NWR) is a nationwide network of radio stations broadcasting continuous weather information directly from the nearest National Weather Service office. NWR broadcasts official Weather Service warnings, watches, forecasts and other hazard information 24 hours a day, 7 days a week.
http://www.nws.noaa.gov/nwr/

Quick References

Nautical chart related products and information	—	**http://www.nauticalcharts.noaa.gov**
Interactive chart catalog	—	**http://www.charts.noaa.gov/InteractiveCatalog/nrnc.shtml**
Report a chart discrepancy	—	**http://ocsdata.ncd.noaa.gov/idrs/discrepancy.aspx**
Chart and chart related inquiries and comments	—	**http://ocsdata.ncd.noaa.gov/idrs/inquiry.aspx?frompage=ContactUs**
Chart updates (LNM and NM corrections)	—	**http://www.nauticalcharts.noaa.gov/mcd/updates/LNM_NM.html**
Coast Pilot online	—	**http://www.nauticalcharts.noaa.gov/nsd/cpdownload.htm**
Tides and Currents	—	**http://tidesandcurrents.noaa.gov**
Marine Forecasts	—	**http://www.nws.noaa.gov/om/marine/home.htm**
National Data Buoy Center	—	**http://www.ndbc.noaa.gov/**
NowCoast web portal for coastal conditions	—	**http://www.nowcoast.noaa.gov/**
National Weather Service	—	**http://www.weather.gov/**
National Hurrican Center	—	**http://www.nhc.noaa.gov/**
Pacific Tsunami Warning Center	—	**http://ptwc.weather.gov/**
Contact Us	—	**http://www.nauticalcharts.noaa.gov/staff/contact.htm**

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